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PUBLIC DOCUMENTS

OF THE

STATE OF WISCONSIN

BEING THE REPORTS OF THE VARIOUS

State Officers, Departments and Institutions,

For the Fiscal Term ending June 30, 1906.

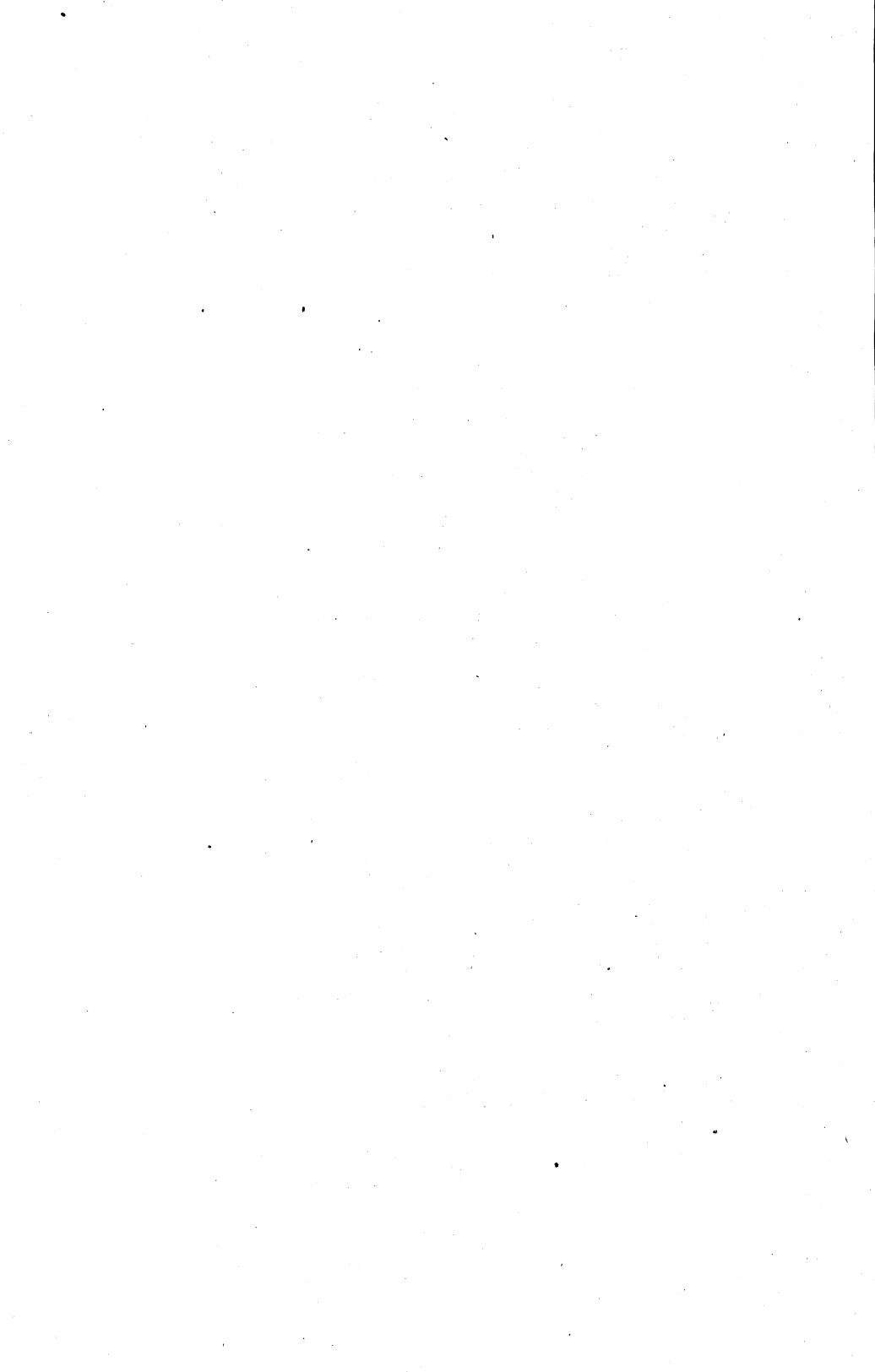
VOLUME 4



MADISON

DEMOCRAT PRINTING COMPANY, STATE PRINTER

1907



PUBLIC DOCUMENTS

FOR 1905-1906.

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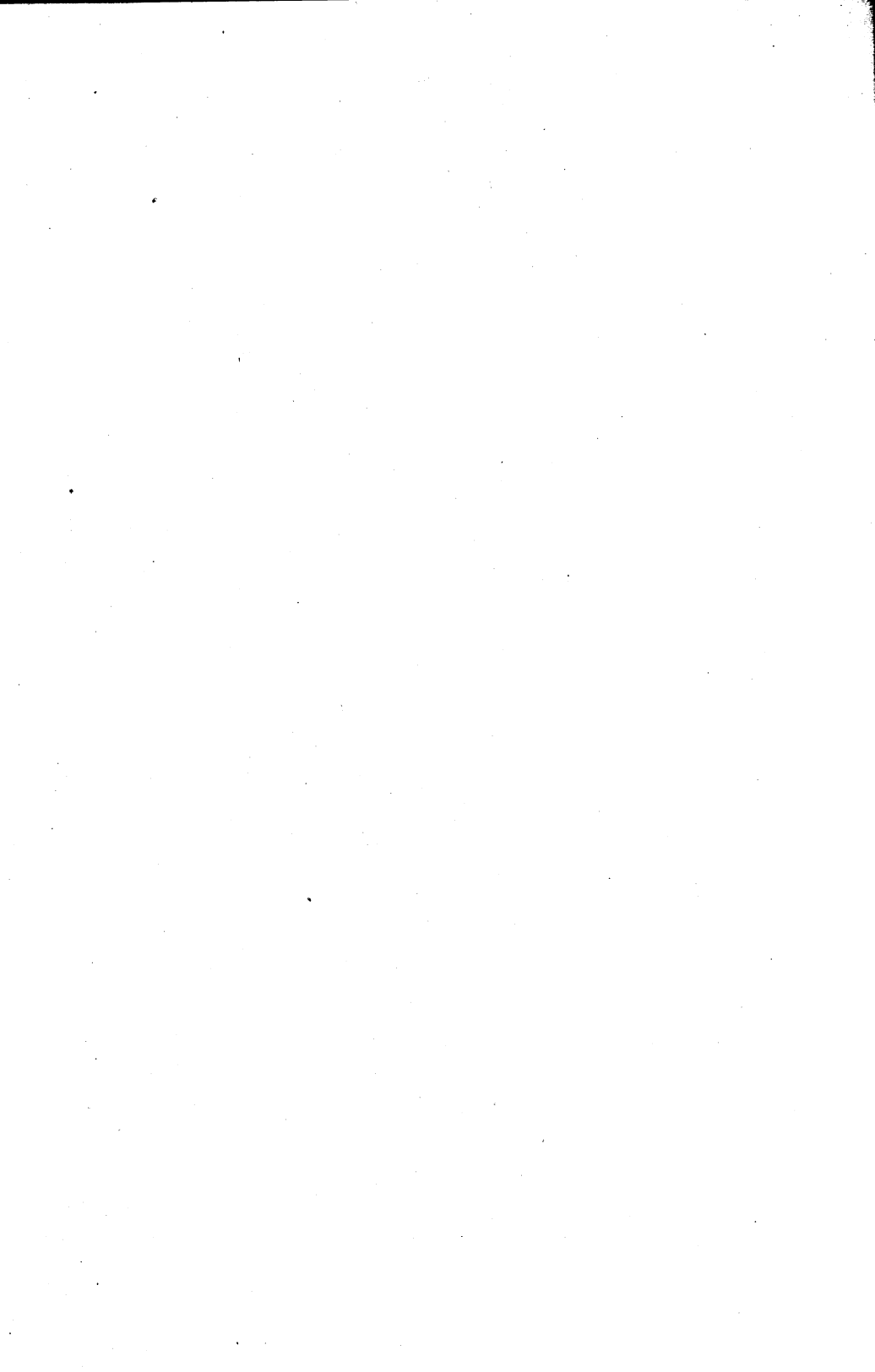
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TWELFTH BIENNIAL REPORT

OF THE

BUREAU OF LABOR

AND INDUSTRIAL STATISTICS.

STATE OF WISCONSIN

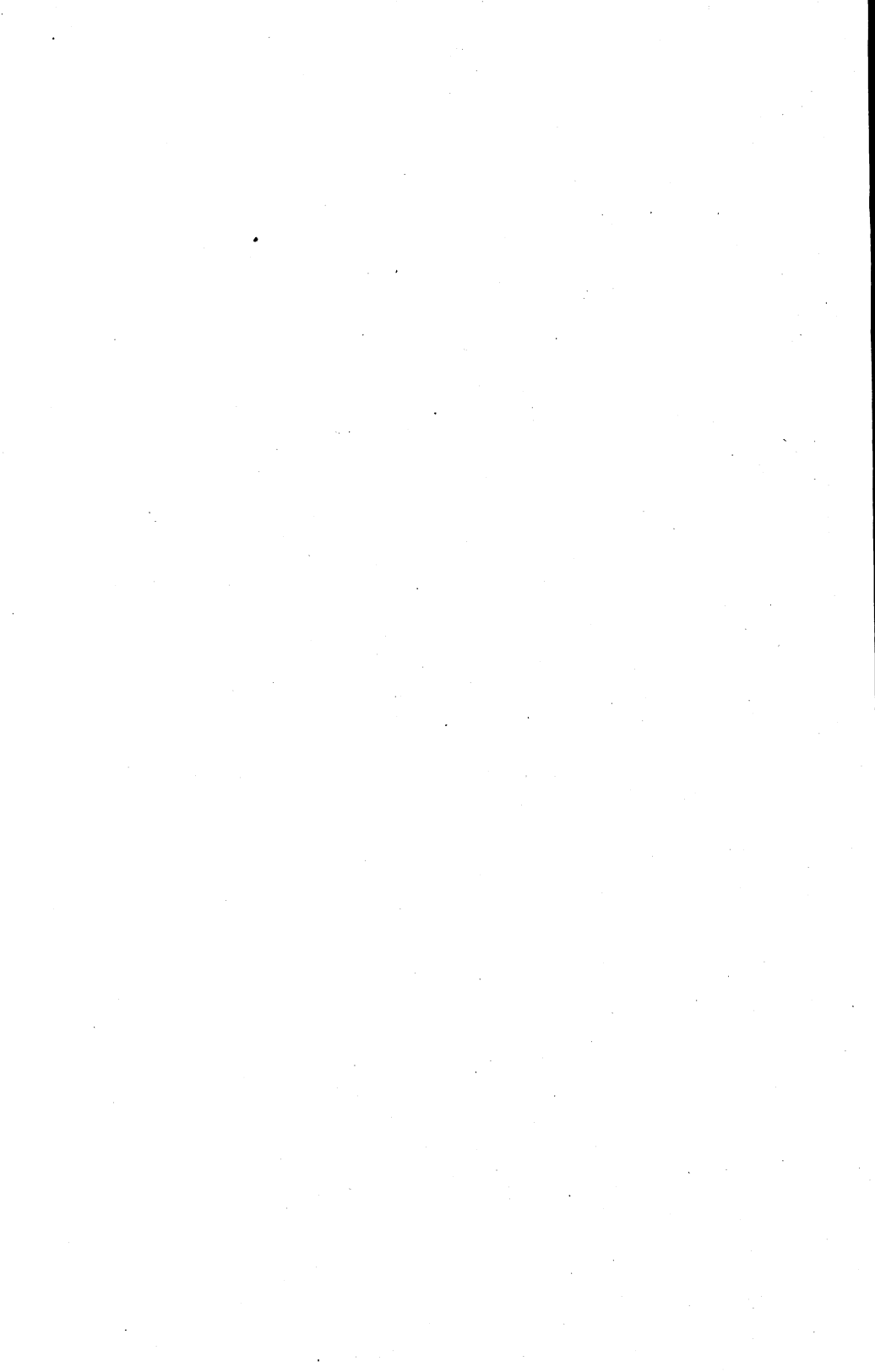
1905--1906.

J. D. BECK, Commissioner.

W. J. HAGENAH, Deputy.



MADISON
DEMOCRAT PRINTING COMPANY, STATE PRINTER
1906



LETTER OF TRANSMITTAL.

STATE OF WISCONSIN,
BUREAU OF LABOR AND INDUSTRIAL STATISTICS.
MADISON, September 30, 1906.

To His Excellency HON. J. O. DAVIDSON,
Governor of Wisconsin.

DEAR SIR:—In compliance with the laws of this state creating the Bureau of Labor and Industrial Statistics, I have the honor to transmit herewith the twelfth biennial report of this department.

Very respectfully yours,

J. D. BECK,
Commissioner.

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INTRODUCTION.

The twelfth biennial report of the Bureau of Labor and Industrial Statistics consists of seven parts.

Part I presents the results of a study of the principle of Co-operation as represented in the co-operative store. It emphasizes the extent to which the principle is now recognized as a factor in social and industrial progress; details the history of the co-operative movement in the United States; enumerates the kinds of co-operative stores, the causes of the establishment of such stores and the causes of their failure when failure has resulted; and presents statistics pertaining to those stores now in existence in the United States, with conclusions deduced therefrom relative to the present status of these institutions in this country.

The statistics and other information contained in this part of the report were collected by the Bureau and compiled by Mr. Ira B. Cross, then a Scholar in Economics in the University of Wisconsin.

Part II, The Statistical Aspect of the Strike, contains the results of an investigation, through the medium of statistics of the development or growth of strikes.

Statistics showing the increase or decrease of strikes in the United States and in foreign countries are presented. There is a discussion of the causes of strikes, particular attention being given to the movements from time to time which the variations in the causes indicate. The effect of trade-unionism upon the frequency, the duration, and the success or failure of strikes is studied. Finally conclusions are presented relative to the function of the strike as an element of industrial life, and to the evolution of the strike as indicated by the statistics for a period of twenty years. Part II was prepared for the Bureau

by Mr. Grover G. Huebner, a Scholar in Economics in the University of Wisconsin in 1905-6.

Part III relates to the Liquor Traffic in the United States and in Wisconsin. It contains the results of an investigation made in accordance with Chapter 418, Laws of 1903, which directed this department "to collect and publish all available facts concerning the manufacture, sale and consumption of spirituous, malt, vinous, or intoxicating liquors used as beverages in the state of Wisconsin." There is a discussion of the magnitude of the liquor traffic as carried on in the United States. The effect of the traffic upon society, as measured by the proportion of the cases of crime and insanity directly traceable to the use of intoxicating liquor, is shown; this data having been obtained as the result of an investigation which was conducted by the Massachusetts Bureau of Labor, an account of which is given in the twenty-sixth annual report of that bureau. The inquiry into the liquor traffic in Wisconsin takes into consideration, chiefly, facts relating to the retail distribution of liquors, such as the application of the local option law, high and low rates of license, number and distribution of saloons with reference to the number and density of population, etc. The statistics presented constitute a fair census of the saloon licenses in the state. A brief summarization of the principal facts exhibited by the data given concludes this part of the report.

Part IV is a report upon housing conditions in the city of Milwaukee. It treats of the tenement house problem in its relation to industrial life; states the methods of solution employed in foreign cities and in America; presents a detailed description of the various elements of the housing problem in Milwaukee; includes a statistical study of Milwaukee tenement houses; presents observations upon the various nationalities living in the cities; and outlines the requirements as to water supply, roofs, ceilings, walls, cellars, yards, garbage disposal, etc., that are necessary in order to insure a sanitary dwelling. There is a discussion of the relation of housing conditions to the existence and spread of tuberculosis. Emphasis is laid upon the need of parks and public play-grounds in crowded districts. Certain suggestions are made relative to steps which may be taken toward remedying such insanitary conditions as at present exist. To this end, also, an appendix is included, con-

taining material when can be used in judging present conditions or as a guide for future regulations.

Part V is a summary of Wisconsin's Resources, Industries and Opportunities. It contains an account of the soils of the state, from a geological standpoint; discusses the relative importance of the various industries carried on within the state, and the opportunities for their further development; and treats of the water power furnished by Wisconsin rivers. Each county is then taken up in detail and its location, area and population given and its soil described. The amount of land improved and unimproved is stated, and the branches of agriculture are suggested for which the soil and climate are best adapted. Much other information regarding land values, crops, etc., is included. Each town and city is next taken up, and a great variety of facts given concerning each. Among these are included those relating to its railway service, telephone and telegraph connections, lighting and traction systems, waterworks, educational facilities, factories, stores, professional men, assessed valuation, etc. Attention is especially directed in the case of each to those industries for which a good opening is offered. At the end of Part V there is included a recapitulation of the different industries best suited to the various cities and villages of the state.

Part VI contains the Manufacturing Returns of the state for the years 1904 and 1905. Each of the fifty-one larger industries is taken up separately, the statistics pertaining to the industry being arranged in eight tables. Following the tables a brief summary of the main facts relating to the industry is given. Twelve minor industries are treated similarly but more briefly. Statistics are also given in summary form for all establishments that reported for 1905, a part of which did not report for 1904 and were therefore not included in the earlier tables. The data are in all cases so arranged as readily to permit of a comparison between those of 1904 and those of 1905. It is therefore possible to determine in the case of each industry whether there was an advance or a retrogression during the period covered by the report.

Part VII contains four separate sections. The first is a report of the work of the factory inspectors for the period from November 1, 1904, to October 31, 1906. The names of the factories inspected are given, together with the number of persons em-

ployed in each, the number of buildings occupied, etc. A considerable amount of other information is presented relative to the various duties performed by the inspectors in the course of their work. The second section is a report of the work of the bakery inspector for the same period. The plan of presentation followed is the same as that just outlined. The third section summarizes the work of the four state free employment offices during the same period. The number of applications for help and for employment made at each office are given for each of the two years covered. The fourth section contains a chronicle of industrial events as published by various newspapers of the state during the year from November 1, 1905 to October 31, 1906.

PART I.

CO-OPERATION.

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THE CO-OPERATIVE STORE IN THE UNITED STATES.

IRA B. CROSS.

CHAPTER I.

INTRODUCTION.

Few people realize how important a factor Co-operation has become in our social and industrial life. Competition, that principle so vigorously advocated by the laissez-faire economists as the forerunner and harbinger of prosperity and individual rights, has disappeared to a surprising extent from the economic world of today. Co-operation on the other hand has become the keynote of social and industrial progress. Its presence and application are to be noted upon all sides. We see it in the co-operation of the capitalists who combine their resources, knowing that it is by this means alone that they can make use of the latest improved methods of production: in the unions of the workers, who realize that it is only by association that they can obtain higher wages and better conditions under which to labor; and in the establishment of co-operative stores, mines, factories and various other enterprises whereby an attempt is made to eliminate the middleman.

It is with but a small portion of the latter group of activities that we shall deal in the pages which follow, i. e., the Co-operative Store.

CHAPTER II.

KINDS OF CO-OPERATIVE STORES.

There are a large number of methods used in conducting co-operative distributing societies, but it will be necessary for us to consider only the most important and characteristic forms of these organizations, inasmuch as the remainder are but adaptations of those which are described below.

Today there still remains, to a great extent, the old fashioned "dividing store" as it was called in the early days of the co-operative movement in Massachusetts. No stock is sold and no dividends are declared. All that is necessary is that some person act as manager of the so-called "store" and get his friends to "bunch" their orders which are then sent to some wholesale or catalog house. The goods in time are shipped direct to the manager who divides them among his neighbors according to the original individual orders, charging a very small sum extra above the wholesale price in order to pay the expenses of freight and drayage. Purchases are thus made at a very low cost, and with but little trouble to those interested. Such trading is being encouraged more and more by the catalog houses, who by this means are able to compete vigorously and very often successfully, with the local retail merchants.

Another method is often followed by secret organizations which obtain trade discounts for their members. Contracts are made with certain firms who agree to give specified discounts upon all purchases made by persons presenting a card of the order. This method cannot be used successfully for any length of time because of the fact that those who do not belong to the order, and consequently do not obtain a discount upon their purchases, soon become dissatisfied with the arrangement, and much antagonism and hard feeling is aroused against the merchants who are parties to such a contract.

These two methods of co-operative distribution require no sale of stock and no declaration of dividends.

In a regular co-operative store, however, shares of stock are sold to individuals in small amounts and the business is conducted upon ordinary trading and commercial principles. At the close of each fiscal period, the length of which varies from six to twelve months, a fixed rate of interest is paid upon the capital stock, while the remainder of the profits is paid as dividends upon purchases. As a rule dividends upon purchases are paid only to members of the association, although in some cases we find them being given to all customers of the store. In the latter case the rate paid to non-members is usually one-half that given to the stockholders in the association. The business is generally run upon a cash basis, although credit is sometimes given to responsible persons or to members of the society. Market prices are rigidly adhered to with but few exceptions.

Many persons confuse a joint stock company with a co-operative trading society. The distinction between the two is very evident. In the former all the profits of the business are paid upon the capital stock, the rate of dividends varying with the net receipts of the trade. In the latter the capital stock receives but a fixed rate of interest, usually high, while the remainder of the profits goes to the stockholders in the shape of dividends based upon the amount of goods purchased. In a joint stock company the number of shares which can be held by one person is seldom limited. In a co-operative association it is usually a case of "one share to a person." In some instances we find a joint stock company possessing co-operative features, the only difference being that in addition to the distribution of the profits of the business among the stockholders upon the basis of the amount of stock held, the members of the company are permitted to purchase goods at a discount of from five to ten per cent. No dividends, however, are paid upon purchases.

In 1844 a few poor weavers in Rochdale, England got together in a cellar and inaugurated a movement in the co-operative field which has since spread to all corners of the globe.

Their efforts resulted in what is now called "The Rochdale Method." It was the first time that a successful basis had been given to the co-operative movement. It was simply a plan of "feeding capital upon the profits of the business." In brief the principles of this system, as practiced today, are as follows:

1. Money is hired but has no vote. A fixed rate of interest is paid upon the capital stock.
2. A person can hold but one membership and have but one vote. Voting by proxy is prohibited.
3. Goods are bought and sold for cash, and at regular market prices. Cutting of prices is not permitted.
4. Profits are returned to the members in proportion to the amount of their purchases.
5. Pure goods are sold and full weights and measures are given.
6. Retail stores are federated and own their own wholesale house.¹

The application of these principles has resulted in the up-building of a movement in England and Scotland which surpasses anything in the commercial world of today. It represents more than 2,120,000 active members, over 10,000,000 customers, and an annual business which considerably exceeds \$500,000,000.00.

This system was first introduced into the United States in 1864 by a co-operative society in Philadelphia and was later popularized and practiced to a great extent by the Grangers and Sovereigns of Industry in their attempts at Co-operation. Today, in the United States, it finds its chief exponents and advocates among the co-operators of the Pacific states under the leadership of the Rochdale Wholesale Company,² and in the North Central states where its doctrines are propagated by the Right Relationship League.³ The Rochdale stores as organized by these two associations are similar in every important regard. In the Pacific Coast movement, however, the wholesale house from which supplies are bought, is owned entirely by co-operative retail associations, located in California,

¹ Co-operative Journal, Oakland, Cal., April, 1904.

² See page 32.

³ See page 34.

Idaho and Washington, while in the case of those organized by the Right Relationship League, each store owns an interest in the Co-operative Merchant's Company of Chicago,¹ a wholesale purchasing association composed both of co-operatively and of privately owned stores. The portion of stock held by the former is exceedingly small although all stores, which are stockholders, share alike in the benefits of the association. The only real difference in the Rochdale system as advocated by these two agencies lies in the fact that the stores of the Right Relationship League are always capitalized at a definite amount while in the Pacific Coast societies the capital stock is unlimited, the price of the shares alone being fixed by the constitution of the association.

As far as we have been able to ascertain there are no stores in the United States which are organized upon the same basis as are the Civil Service, and Army and Navy stores of England. The members of these associations come exclusively from the Civil Service, the Army, or the Navy, as the names signify. This method of co-operative distribution originated in 1864 in the establishment of a co-operative store by members of the Post Office Department in London. These stores sell at cost prices, or as near that as possible, the object, unlike that of other co-operative stores, being to supply the members with goods at the lowest possible prices rather than to afford them the inducement to acquire the habit of saving.²

An unique development of the co-operative movement in the United States is to be found in a number of so-called "College Co-operative Societies" connected either directly or indirectly with many of our educational institutions. In most cases, under judicious management, they prove to be very successful and of great benefit to the student body which patronizes them. Books, athletic goods, paper, and all those things needed by students in their college work are carried in stock. Membership is obtained by the purchase of a share or membership card, the price of which varies from \$1.00 to \$5.00. In some cases the membership has to be renewed each

¹See page 33.

²Holyoake, History of Co-operation, Vol. II, p. 185.

year, in others it is possible to purchase a one, two, three, or four year card, or still again, in some places the fee is the same for any length of time. Interest is never paid upon the shares or membership cards, the profits of the society being divided among the members upon the basis of the amount of goods purchased. Yearly meetings are held for the election of officers and manager, and for the consideration of the yearly report. When the student leaves the college his membership remains a portion of the company's assets. It cannot be withdrawn nor sold to another. It is a case of "once a member, always a member."

There are many other methods of conducting a co-operative association but the above briefly describes the most important of those which are followed by the co-operators of today.

CHAPTER III.¹

HISTORY OF THE CO-OPERATIVE MOVEMENT IN AMERICA.

No trace of the establishment of co-operative stores in the United States is to be found prior to the formation of the New England Association of Farmers and Mechanics, in 1831. This was one of the many district labor associations which sprang up in this country during the early part of the 19th century as a result of changing economic conditions. Its first convention was held in Boston in 1831, and it was at this meeting that the subject of co-operation was taken up and discussed. Various other organizations also took part in the agitation for the establishment of co-operative enterprises, with the result that several stores were started in different parts of the New England states. With no precedents to serve them as a guide, these ventures soon failed, leaving no records or results behind them.

Previous to this, however, a system of trade discounts had existed in the larger cities whereby an organization or secret society was able to obtain reduced prices for its members. Several dividing stores were also in operation. It was in one of the local divisions of the New England Association of Farmers and Mechanics that the latter system bore fruit of great importance. The meetings of the Boston Division were poorly attended, and one of the members thought that interest could probably be aroused if each person could be induced to put in a certain sum of money with which a box of tea or a barrel of flour might be purchased and divided. The result was that very soon a dividing store was established. So successfully did this plan work that in October, 1845, twelve of these men

¹The major part of that portion of this chapter which deals with the co-operative movement prior to 1860, is based for the most part upon the excellent monograph by Dr. E. W. Bemis, "Co-operation in New England," published in Vol. VI of the Johns Hopkins University Studies in Historical and Political Science, and also upon an able article in the *North American Review*, Vol. 137, p. 327, upon "Co-operation" by R. Heber Newton.

met in a little room over the Boylson Market in Boston and organized the first division of what was later known as "The Workingmen's Protective Union of America." The latter association was formed on January 7, 1847, and so rapid was its growth that one hundred and six divisions were established before 1850. Local divisions formed a Central Agency and made quarterly returns to it relative to membership, sales, amount of stock and various other matters. The sales of the association amounted to \$112,507.79 in 1848, \$220,801.60 in 1849, and \$535,338.56 in 1850. A purchasing agent was located in Boston and to him were sent orders to be filled, and produce to be sold. The agent was paid no regular salary, but received a commission of three-fourths of one per cent upon all purchases made, and a commission of two per cent upon all produce sold.

In 1849 the name of the organization was changed to that of "The New England Protective Union." Eighty-three out of the one hundred and six divisions in 1850 had a membership of 5,109, while eighty-four of them reported a capitalization of \$71,890.36, the average capital stock being \$855.63. During the last four months of 1850, sixty-seven divisions of the "Union" purchased over \$102,000.00 worth of goods through the Central Agency, while in the first nine months of the following year, over \$620,000.00 worth of goods was purchased through the same agency. The number of divisions had grown to four hundred and three in 1852, and the sales of one hundred and sixty-seven of them amounted to \$1,696,825.46. Following the disruption of the "Union" in 1853, a rival organization was formed which was called "The American Protective Union." From 1853 to 1858 this association transacted a business varying in amount from \$1,000,000.00 to \$1,536,000.00.¹

It was believed by some of the officials of these organizations that by 1850 there were over seven hundred of these stores in operation. This year was surely a high water mark for the protective unions, for they immediately began to wane in importance. Many failed completely, while others passed into joint

¹ Mass. Bureau of Labor Statistics, 1877, p. 78.

stock companies, and into the hands of private individuals. In a large number of cases the managers of these concerns bought out the interests of the stockholders and ran the store as a private establishment, while but one or two of them endured the strain occasioned by the approach of the Civil War.

These early co-operative stores, sold, as a rule, to none but members of the association. They were supposed to give no credit, altho there were many instances in which credit was freely granted to almost any person. At first no attempt was made to secure large profits, the stockholders being content with a six per cent dividend upon their shares, but in the later days of this movement a desire to make all the money possible for the stockholders was noticeable. The price of goods, which had previously been placed as close as possible to the actual cost of the articles, was increased so as to obtain larger dividends for the members.

As a weapon for the betterment of the condition of the workingman, the New England Protective Union practically ended in 1853, but as a "co-operative effort on the joint stock plan for the concentration of trade, it succeeded in part probably up to 1857 or 1869."¹

If the Civil War had not occurred just at this time and thus hastened, if not actually caused the downfall of these stores, it is safe to say that the co-operative movement would be much farther advanced than it is today. True, the methods which were then in use would not be fitted to our modern trade conditions, but the methods of co-operative stores evolve as do the methods of other mercantile enterprises. They adapt themselves to their environment with a like rapidity. On the other hand, these stores might have followed the same course as did those of the later labor movements, i. e., died with the decay of the movement itself. But even if this had been true, the co-operative movement would have received a great impetus from their continued existence.

There are several other causes why these stores failed as they did. The people had not been sufficiently trained in the matter of co-operation. They could not always see the value of trad-

¹Mass. Bureau of Labor Statistics, 1877, p. 85.

ing at the Central Agency. They had not learned to suppress their individual desires whenever these happened to conflict with those of the majority. The managers were often incompetent and untrained in the ways of the business world. The stores sold at cost, or as close to the cost price as possible. This naturally engendered an extraordinary amount of opposition from the retail merchants who used every means at their disposal to kill the co-operative establishments. Then too, by selling at cost prices, there was no opportunity to accumulate a surplus from the profits with which the business might be tided over an era of poor trade conditions. The result was that many of the stores failed because of the fact that there was never anything behind them excepting the daily purchases of the members. Prices during the '50's were very unsteady. Many of the stockholders became frightened, because of the unsettled condition of the business world and sold their stock, or else demanded that the store be abandoned.

During the next few years, although co-operation as a movement was dead, nevertheless several co-operative stores still existed and did fairly well, while one or two new stores were organized in various parts of the Eastern states. In 1864 the Boston Labor Reform Association began the co-operative buying and selling of coal among its members. So successful was this venture that they soon began the sale of produce, flour and other necessities of life. Goods were sold only to members of the Association and always at cost. In 1865 this store was formally incorporated and at about the same time similar enterprises were started at Roxbury, Charleston, Chelsea, and Fitchburg, Massachusetts.¹

Trade magazines published during the '60's make mention of meetings which were held for the discussion of Co-operation, of calls for lectures and for information. Fincher's "Trade Review"² notes the establishment of thirty-six stores in ten States from 1863 to 1866 while many others were being planned. At about this time a conference of the stores in the New England States was held at Boston and the establishment

¹ Massachusetts Bureau of Labor Statistics, 1877, p. 89.

²Quoted by R. H. Newton, *North Am. Rev.*, Vol. 137, p. 328.

of a wholesale house was seriously discussed. Nothing of importance, however, resulted from this convention. As a result of this renewed interest, which was purely of a local nature, the following additional stores were established in Massachusetts:

- Sandwich Workingmen's Co-Operative Association, 1866.
- South Reading Co-Operative Association,.....1866.
- Fall River Workingmen's Co-Operative Association, 1866.
- Acushnet Co-Operative Association1868.
- Lynn Workingmen's Co-Operative Association....1867.
- Cochiluate Protective Union1868.
- Gardner Co-Operative Association1868.
- Lynn Co-Operative Grocery Company1868.

In 1864 the Rochdale method of Co-operative Distribution was introduced into the United States. At that time the members of a Philadelphia co-operative store obtained the constitution and by-laws of the original Rochdale Association and planned their organization upon the same principles. They were very prosperous for a short time, the sales in some instances exceeding \$7,000.00 for three months. Three branches were started but the venture proved to be too expensive and the stores failed.

On August 20, 1866, the National Labor Union was organized in Baltimore. It was to have been a national federation of all unions, but was born before its time. After several poorly attended meetings, the movement was abandoned. However, one of the resolutions passed by this body declared that "We hail with delight the organization of co-operative stores and workshops, and would urge their formation in every section of the country, and in every branch of business." The Union lived but a few years and consequently had no effect upon the co-operative movement. Its declaration is significant in the light of the subsequent attitude of organized labor towards Co-operation. It was but a harbinger of that which was to follow.

THE PATRONS OF HUSBANDRY.

In 1867 the Patrons of Husbandry was founded. This order, which was destined to play such an important part in the history of co-operation, was a secret organization "devoted to the interests of the agricultural classes." It originated through the efforts of O. H. Kelley, who, as an official of the Bureau of Agriculture, had traveled extensively throughout the United States inquiring into the condition of the American farmer. He was amazed at the seeming poverty and misery of that class, and immediately set about to organize a society which was intended to be a messenger of the "Farmers' Millenium."

Extensive railroad building had scattered an enormous number of immigrants throughout the country, and consequently had increased the competition among the farmers. This resulted in lowering the prices which were received for their products and in increasing their hardships. Linked with this was the fact that the farming population was entirely at the mercy of the middlemen, who charged exorbitant rates for all commodities. This was not wholly due to the desire of the latter to be greedy, but to the fact that the farmers had little or no ready money, and the merchants were forced to sell their stock for credit. The farmers were unable to free themselves from the evils of this credit system and could not successfully oppose the retailers because of lack of organization. The originators of the Grange, as the movement was called, saw these difficulties and attempted to remedy them, first, by insisting upon the principle of cash payments, and secondly, by an effective organization of the farming population.

During the first few years of its existence, the membership of the order increased at a rapid rate, owing partly to the pressure of the hard times which were then prevalent. In 1873 more than 10,000 branches were established in six months. This number was practically doubled in the succeeding year, while in 1875 there were over 763,000 members of the order.

The Grange, from the very nature of its conception, was a society based upon co-operation. It had for its object the establishment and extension of co-operative principles among the farmers, as is shown conclusively by the following section taken from "The Declaration of Purposes of the Patrons of Husbandry."

"For our business interests we desire to bring producers and consumers, farmers and manufacturers, into the most direct and friendly relations possible. Hence we must dispense with the surplus middlemen, not that we are unfriendly to them, but we do not need them. Their surplus and their exactions diminish our profits."

In a circular letter sent out to the manufacturers by the Grange officials shortly after its organization, the object of the order was stated as being the desire

"To secure to its members the advantages of Co-operation in all things which affect their interests, thus enabling them to purchase implements and machinery at as low a cost as possible by saving the commission usually paid to the middlemen, and the profits which now go to a long line of dealers standing between the manufacturers and the farmers."

It was only by an association among the farmers that their condition could be improved. From the very first the subject of co-operation occupied an important place in the councils of the order and it was but a short time until the members began various co-operative enterprises.

One of the most common methods as well as the one which was tried first of all, was to have the members of the local Grange concentrate their orders upon a certain wholesaler or manufacturer with the understanding that a discount was to be given to them upon their trade. This plan was comparatively successful in some instances, but the opposition of the retail merchants often succeeded in influencing the manufacturers to cease trading with the Grangers. With but little better success county Granges were then formed in whose hands were placed the orders of the local Granges. The ultimate outcome of the whole matter was that all of the local Granges banded together and agreed to support a State Purchasing Agent to whom should be sent all the orders of the subordinate associations.

He was thus enabled to buy in large quantities, in fact in car-load lots, and at greatly reduced prices. He was given the power to make arrangements with the individual manufacturers and always attempted to get as favorable discounts as possible. Confidential lists containing the names of those houses with which arrangements had been made were sent to each local Grange. Orders were made up from these lists and forwarded to the State Purchasing Agent. He re-arranged the orders and sent them to the various dealers. The latter then forwarded a receipt for the same to the Agent and shipped the goods direct to the local Granges. At a meeting of the latter, the members would gather and distribute the purchases. By this means many thousands of dollars were saved to the Grangers, the goods being purchased at almost wholesale prices.¹ The business of these State Agencies was enormous. The Ohio Agency in one year transacted almost a million dollars worth of trade, while that of Indiana often amounted to more than a thousand dollars a day. It was no unusual occurrence to have the annual purchases of these agencies range from \$200,000.00 to \$700,000.00. At one time the Grange had five steamboat lines, thirty-two grain elevators, and twenty-two warehouses to assist in the co-operative buying and selling of goods.

The State Agents were required to give bonds equal to the amount of money which they might be called upon to handle while transacting the trade of the order. This effectually guarded the members of the Granges against losses which might otherwise have occurred. Cash payments were always insisted upon and it was by following this principle that the farmers were able to break the power of the credit system which had been so burdensome to them. The Purchasing Agent would at times buy a stock of goods at a bankrupt sale, and then in turn dispose of it to the members of the Grange at greatly reduced prices.

In sending orders to the manufacturers, the State Agents as a rule would give the preference to those establishments located in the state.

¹It is claimed that over \$12,000,000.00 was saved to them by this method of trading in 1874.

The discounts enjoyed by the Patrons through their State Agencies varied from fifteen to fifty per cent. Quoting from several of the confidential circulars, which were found during this investigation, we learn that "upon Weed Sewing Machines, wooden and iron pumps, fifty per cent is given to all Patrons." Reapers which had previously sold for \$275.00 were retailed to them at \$175.00; threshing machines were reduced from \$300.00 to \$200.00 and wagons from \$150.00 to \$90.00. In Iowa the Grangers received a discount of forty per cent upon sewing machines, twenty to twenty-five per cent on parlor organs, twenty-five to thirty-three per cent on scales, fifteen per cent on shellers, twenty per cent on wagons, thirty-three per cent on hay forks, and twenty-five per cent on harrows, cultivators, feed grinders, and other miscellaneous agricultural implements. It can be safely said that the Patrons saved at least thirty-three and one-third per cent upon all their purchases by this system of trade discounts. The "Confidential Revised and Consolidated Price List of the Ohio State Grange for 1876" contained the names of one hundred and seventy-five firms, located for the most part in Ohio, which gave trade discounts to the Patrons upon almost every conceivable article.

At first the only inducement held out to the farmers as a reason for their joining the association, was this financial side of the order, the savings upon purchases which would result from buying through the State Agency. With the panic of 1873 many of the Granges disbanded because of the fact that there were no social ties to hold the members together. From that time on however, the social side of the order was made more prominent without diminishing the attention given to co-operative buying and selling.

The trade of whole sections of the country was often concentrated in the orders sent in through the Agencies of the Grange. Bankruptcy stared many of the middlemen in the face. It was no more than to be expected that the small retailers would fight these attempts of the Grangers at co-operative buying, and this they did by trying to induce the wholesalers and manufacturers not to sell to the Grange Agencies,

While they succeeded in some cases, nevertheless as a rule the wholesalers preferred to sell to the Patrons, inasmuch as cash always accompanied the order. In many instances the local dealers reduced the prices to such an extent that the farmers were able to buy as cheaply from them as through the Grange. Sometimes they even sold at a loss while attempting to secure the trade of the farmers in their localities. This policy often resulted only in bankruptcy for the retailer. "Enterprising business men were quick to take advantage of the Grange movement, and advertised their houses as Grange Supply Stores." Montgomery Ward and Company began in this manner, and their customers in the early days were Grangers for the most part.¹

This system of trade discounts "soon assumed proportions beyond the business talent and experience of the order."² Many and varied complaints arose and in the majority of cases the State Agencies were abandoned. It was claimed that "the Agent had handled articles of inferior value," "that he had selected second and third rate articles," and that "the price of machinery was higher than that demanded by the local dealers."³ Delays in the shipment of orders, the forwarding of unsatisfactory goods, the necessity of always sending cash with the order, these and many other disadvantages resulted in creating great dissatisfaction with the system of Agencies, and in the report of the Executive Committee at the National Grange in 1877 we find the following significant recommendation:

"We have made much inquiry and investigation into the system of State Agencies . . . and feel warranted in advising the discontinuance of any one now in existence. There have been more failures than successes."

Not only was there dissatisfaction among the Patrons with the methods and results of these agencies, but the same feeling existed as well among the manufacturers, but arising from different causes. The confidential discount lists which were sent to

¹A. E. Paine, *The Granger Movement in Illinois*, Uni. of Ill. Studies in History, Vol. 1, No. 8, p. 42.

²R. H. Newton, *North Am. Review*, Vol. 137, p. 330

³Wisconsin Grange Bulletin, August, 1878.

each local Grange did not always remain confidential. Several years after the inauguration of this system it soon became apparent that

“Injurious publicity had been given to these circulars. Many of them never reached their destination and in all probability fell into other hands than was intended. Members were not sufficiently strict in carrying out their part of the agreement with the manufacturers . . . and the result could readily be seen. Manufacturers soon became aware of the fact that their private arrangements had been made public . . . and withdrew from the bargains with a feeling of distrust for the order.”¹

Attempts at remedying these difficulties were given up in despair by the Executive Committee of the National Grange and in short time the greater part of the Agencies were abandoned.²

But during the years just preceding the abolition of the Agencies, another form of co-operation began to attract the attention of the Grangers. It was the establishment of co-operative stores. The various State Granges had discussed the matter at great length, but it was not until 1875 that the National Grange took any action relating to this subject.

In Wisconsin we find that as early as 1874 “six Granges united to form a Mercantile Association with \$5,000.00 stock, \$212.00 of which was paid up.”³ During the first year of its existence, a business of over \$12,000.00 was transacted and a dividend of ten per cent was declared upon paid-up stock. Another Grange co-operative store in Henry county, Iowa, had done a business of \$28,000.00 during 1874, while a third, located in Clinton county in the same state, had sold over \$40,000.00 worth of goods.⁴

The agitation for the establishment of co-operative stores continued to grow. In 1875 an English corporation known as “The Mississippi Valley Trading Company” sent a representative to the United States with the hope of interesting the

¹Report of the Executive Committee to the National Grange, 1875.

²Purchasing Agencies still exist in several states in which the Grange is comparatively strong.

³Wisconsin Grange Bulletin, March, 1875.

⁴Wisconsin Grange Bulletin, June, 1875.

National Grange in an attempt to establish co-operative stores in the Mississippi Valley. When this had been done, they claimed that it would then be possible for the co-operators of England to carry on the purchase and sale of goods directly with the co-operators in the United States. The National Grange officers did not consider the Mississippi Valley Trading Company to be the bona fide representative of the Rochdale co-operators, and hence refused to have any dealings with them.

So great had become the interest in the subject of Co-operation among the Grangers, and so urgent was the necessity of the National Grange taking some action in regard to the matter, that they sent a representative to England to study the movement and report thereon. At the same time the Executive Committee recommended that "the National Grange use every effort to encourage among the Patrons the establishment of retail and wholesale stores upon the strictest principles of Co-operation." This resulted in the printing and distribution of thousands of copies of the constitution, by-laws, and other documents of the Rochdale co-operators by the National Order.

Stores sprang up in almost every city in which local Granges were located. The Worthy Master of the National Grange in his address before the National Convention in 1876 said, "Hundreds, and it may be, thousands, of co-operative stores have been established in the various States and Territories of the Union with various amounts of capital and perhaps as various in other features and in their fortunes." "In Illinois at one time there were Grange stores in one-half of the counties,"¹ based for the most part upon Rochdale methods, and usually having a capital stock of \$5,000.00 in shares of \$10.00. In Massachusetts in 1875 there were fifteen distributive co-operative associations "representing a share capital of \$75,000.00, and assets equaling \$140,000.00 in value. Eight making reports showed 1,650 members with a share capital of \$50,000.00 and sales amounting to about \$500,000.00 per year."² There were also thirty dividing stores in Fall River, Mass., which had about 1,500 members and an annual trade of \$300,000.00,

¹A. G. Warner, *Three Phases of Co-operation in the West*, Am. Econ. Ass. Publications, Vol. 2, Monograph 1, p. 34.

²Massachusetts Bureau of Labor Statistics, 1875, p. 456.

the average charge of conducting the business being an addition of about four per cent to the wholesale prices of the articles purchased.² During this year, Grange co-operative stores were also established at Los Angeles, Visalia, Grand Island, Meridan, Santa Barbara, and San Buenaventura, California.

The demand for literature upon the subject of co-operation was unprecedented and the Secretary of the National Grange in one year distributed over 120,000 copies of English tracts upon this matter.

The customary basis upon which these stores were organized and operated was as follows:

1. Cash system of business.
2. Sell for a fair margin of profit.
3. A fixed rate of interest on share capital.
4. Quarterly settlements.
5. Division of profits among the purchasers.
6. Full dividends to the shareholders on purchases.
7. Half dividends to non-members and non-Patron customers.
8. Each member to have one vote regardless of the number of shares owned.
9. Not over one hundred shares at \$5.00 each shall be owned by one person.

This as will readily be seen, was modeled in almost every respect upon the Rochdale system. It is needless to say that these rules were not closely followed by the Grangers and many failures ensued.

So enthused had the Patrons become over the matter of co-operation that the Worthy Master in the National Convention in 1876 proceeded, during his address, to formulate "A National System of Co-operative Distribution." He proposed that the United States be divided into six districts, each of which would have a central shipping point with warehouses, wholesale stores and other necessary equipment. To facilitate trade between the co-operators of England and the United States he advised the formation of an "Anglo-American Co-operative Trading Company Ltd." But the Patrons had overreached their mark and within the next few years the order

²Massachusetts Bureau of Labor Statistics, 1875, p. 458.

began to decline as did the enthusiasm concerning the establishment of co-operative stores. Many of the projects of the Grange were given up and nothing more was heard of the "Anglo-American Co-operative Trading Company Ltd."

In Wisconsin, however, in January, 1878, there were at least twenty Patron co-operative stores, a majority of which were members of a state co-operative association which met at the same place and time as did the State Grange. Four of these in 1878 reported a capital stock of \$16,200.00 and a trade of \$107,000.00.

The enthusiasm of the Grangers for co-operation gradually died away as prosperity followed the panic of 1873 and with the relaxation which usually follows the rapid growth of any organization. A large number of stores failed, although we find in Ohio, according to the report of the Bureau of Labor Statistics for that year, and there were "stores and agencies of the Patrons in nearly every county in the State through which everything needed by the farmer from a paper of pins to a threshing machine is furnished at wholesale price for cash with the addition of the net cost of distribution." In Texas also in 1885 there was a co-operative wholesale society with about 150 retail stores operated in connection with the Order of the Patrons. In Missouri in 1880 there were fifty-seven Grange stores together with a State Purchasing Agency.¹

Today but few of the stores established by the Patrons remain. Although but temporarily successful, nevertheless the Grange stores did a great work. They not only succeeded in saving millions of dollars to the farmers upon their purchases, but they were also greatly instrumental in lowering the prices of articles to persons who were not members of the order. The low prices gotten by the Patrons through their stores and agencies forced the retailers to reduce their prices materially in order to compete with them. The system of cash payments, enforced to a greater or less degree by these co-operative ventures, succeeded in freeing the farmers to a considerable extent from the oppression of the old system of credit. They also learned how to co-operate with one another and realized that

¹ Missouri Bureau of Labor Statistics, 1880, p. 213.

more could be accomplished when men associate and work together than when they act as individuals.

The greater portion of the Patrons did not realize the difficulties which stood in the way of their success as co-operators. They rushed into the movement with an enthusiasm almost unparalleled in the history of farm and labor movements. That they would fail was a foregone conclusion, although in exceptional cases a few of the stores were, and still are, exceedingly successful. But what of the hundreds that failed! It appeared to be a comparatively easy matter to displace the middleman. Co-operation then, as now, painted a pretty picture to most men, a picture of joy, of harmony, and of financial success. "Many looked forward to a kind of Granger's Millennium,"¹ but they little realized the difficulties which lay before them. Many were disappointed with the results of their attempts. They had expected great returns from these undertakings and when they discovered that they were really not becoming millionaires, they became discouraged with the venture and abandoned it in disgust.

As farmers they had always led a more or less isolated independent life. They had no need, and no opportunity, of co-operating with one another in previous years. They did not know how to work together and when this spirit is lacking, successful co-operation is impossible.

Patron stores were established in places where it would have been impossible for any co-operative enterprise to have existed, no matter what safeguards might have been thrown around the association. Good business management was also lacking. It was impossible for a man who had lived upon the farm during his whole life to step into the shoes of a merchant and successfully conduct a co-operative business.

It also seemed impossible for the farming class to "break away" from the habits of the past. They disliked the idea of paying cash for goods purchased. Many found it much more to their liking to buy goods of the local merchant who would give them credit for several months.

¹ Warner, Three Phases of Co-operation in the West, Am. Econ. Assn. Pub., vol. 2, p. 12.

The small Patron stores could not keep an extensive line of goods in stock owing to the fact that they were not sufficiently capitalized. The result was that the Patrons readily found fault with the goods and with the management of the store. Quarrels, jealousies and abandonment usually followed.

THE SOVEREIGNS OF INDUSTRY.

Shortly after the reaction against the Patrons had set in, another organization which had as its motto the word, "Co-operation" appeared upon the economic field with the intention of doing for the workers in the factory what the Patrons had done for the workers upon the farm. This organization was "The Sovereigns of Industry," and was begun in 1874. Briefly, it was a secret order with pass words and ritual. It grew so rapidly that before forty days had passed "councils were formed in eighteen States" and in two years the order had spread over twenty-five States.

The purposes of the order were fully set forth in the preamble to the Constitution of the National Council, which stated that the order intended to establish "a better system of economical exchange and to promote, on a basis of equity and liberty, mutual fellowship and co-operation among the producers and consumers of wealth."

"The first attempts were to secure reduced rates from regular tradesmen who in consideration of receiving the patronage of a large number of persons, would make a considerable reduction to every one who quietly presented a Sovereign's trading card."¹ These discounts varied from five to fifty per cent and goods were thus often sold to the Sovereigns at five and ten per cent above cost. Committees from the local organizations waited upon the merchants of the town and got the lowest possible prices from them. The Sovereigns would then concentrate their purchases upon the lowest bidder. This trade was considerable as the order increased in numbers, and the merchants found it to their advantage to make as low prices as possible in order to obtain it. By this means the

¹Boston Herald, Nov. 25, 1875.

members of the order were able to get the very lowest prices upon all things used in the home, and contracts were made with merchants dealing in goods of every description. State and National Committees also made contracts with manufacturers and wholesalers, and confidential lists bearing the names of these firms were distributed among the members of the society.

"But leading minds in the movement early became of the opinion that only by starting Sovereign stores could they reach rock bottom prices for groceries."¹ The National Council urged the local councils to establish co-operative stores and with this in mind the former printed and distributed thousands of copies of the Rochdale by-laws and constitution. For two years "the Sovereigns of Industry kept two paid lecturers in the field who devoted much of their time to instructing the people in Co-operation."² Stores owned and operated by the Sovereigns sprang up all over the Eastern and Central parts of the United States, but they in turn were soon to follow in the steps of the co-operative experiments of the Grangers.

In Massachusetts in 1875 there were forty-eight stores in operation with a capitalization of \$30,228.00 and an average monthly trade of \$26,250.00. In 1876 the number of establishments had fallen to thirty-nine. Twenty-nine of these were capitalized at \$35,316.00 and had an average monthly trade of \$49,806.00. One-half of these were joint stock companies, seventeen did not deliver goods, twenty sold only to Sovereigns, and twenty-two sold below the current market prices.³

Co-operative stores were established, not by the sale of stock, as is customary with ordinary co-operative companies, but by the loaning of money by the individual members to the council. These loans were for any length of time, and usually bore seven per cent interest. Several councils in a locality would then combine the money thus collected and prepare for the establishment of a co-operative store. Such a combination of councils could have no standing before the law. Hence each council was asked to elect one trustee for every \$100.00 sub-

¹ Boston Herald, Nov. 25, 1875.

² E. Bemis, U. S. Bulletin of the Dept. of Labor, Vol. 6, p. 614.

³ Massachusetts Bureau of Labor Statistics, 1877, p. 100.

scribed by the members of that council. These trustees then organized under the Massachusetts Law of 1871 as "The Sovereign's Trading Company," and began business. The shares of the council were in the name of the trustees, and any appropriation of them by the latter was carefully guarded against.¹

The usual method of conducting business was to sell at the lowest possible prices and only to members of the order. No dividends were declared, interest being paid on the money subscribed. The business was controlled not by the members who had contributed the money with which the store was begun, but by the councils of the community. This democratic method of operation soon resulted disastrously. The sale of goods to Sovereigns only, was a bad policy, for although the stores sold only to members and could draw no trade from any other source, the members could trade elsewhere, as they often did when attractive bargains were offered by the retail merchants.

The order had grown too rapidly. Many undesirable and ignorant people had been drawn into the movement.² Continued hard times made it exceedingly difficult for the members to remain in the order, inasmuch as no employment could be found by them. Quarrels and jealousies arose with the result that the National Order was disrupted and the Sovereigns of Industry soon disappeared. The majority of their stores also failed, although a few of them still remain.

In 1877 there were thirty incorporated co-operative stores in Massachusetts with a paid up capital of \$71,279.00.³

THE INDUSTRIAL BROTHERHOOD.

In 1872-74 another attempt similar to that of the National Labor Union was made to unite all the organized workmen into a national body. This federation was called "The Industrial Brotherhood." It lived but a few years and then disappeared from the industrial field. The fourth plank

¹ Boston Herald, Nov. 25, 1875.

² E. Bemis, Am. Econ. Assn. Publications, Vol. 1, Mon. 3, p. 46.

³ American Co-operative News, Sept., 1897.

of the preamble to the Constitution of the "Brotherhood" called for "the establishment of co-operative institutions, both productive and distributive." The organization took no active part in the propagation of co-operative doctrines. Its existence was of too short a duration. Its purposes as well as its platform were adopted by the Knights of Labor in 1878, the latter having been organized in 1868.

THE KNIGHTS OF LABOR.

From the very first the Knights of Labor were pledged to a Declaration of Principles which was extremely co-operative in its nature. Its members immediately undertook the establishment of co-operative stores, factories, foundries, and various other enterprises throughout the United States. In 1882 the National Convention created a Co-operative Board. Nothing of importance was ever accomplished by this committee inasmuch as they did nothing more than merely recommend that "the local Assemblies use every effort to establish co-operative stores."¹ The wide scope of the measures advocated by the Knights of Labor is revealed in a resolution which was adopted at the Philadelphia Convention in 1884. The resolution declared that it should be the endeavor of all members of the Knights of Labor "to associate our own labor in order to establish co-operative institutions such as will tend to supersede the wage system by the introduction of a co-operative industrial system."² Their goal was the complete destruction of the competitive wage system and the inauguration of one based entirely upon co-operation.

Exceptionally few of the stores and co-operative establishments started by them are still alive. Even in Minneapolis, which became famous as the home of the most successful attempt at co-operative production, inaugurated mainly through the influence of the Knights of Labor, the home of the Co-operative Coöperage Shops, even in this city we find that fierce competition and sharp business practices together with the in-

¹Powderly, *Thirty Years of Labor*, p. 469.

²Powderly, *Thirty Years of Labor*, p. 453.

vention of new methods of production, have practically destroyed all that which survived after the decline of the Knights of Labor co-operative movement.

It was also during this period that the Plumbers International Union and other organizations accumulated funds for the purpose of propaganda along the lines of co-operative industry, while at the same time the Sociologic Society of America was very active in spreading the same doctrines throughout the United States.

It is as exceedingly difficult to obtain accurate data concerning the movement of this period (1881-1888) as it is today. The statement of J. M. Bloomer, Master Workman of the Ohio Knights of Labor in 1887, that "From the most reliable data at hand one might estimate the number of co-operative stores in New England and the Eastern States at two hundred and the Middle and Southern States at three hundred with a total capitalization of \$5,000,000.00"¹ is without doubt greatly exaggerated, coming as it did from one who was, and still is, an enthusiastic advocate of co-operative doctrines. Nevertheless we find that there were eighteen co-operative stores in Maine in 1887;¹ ten, and perhaps more, in Ohio;² three or four in Minnesota,³ and ten in Illinois.⁴ Those in Illinois for the most part were joint stock corporations organized under the laws of Illinois and composed of workingmen. They did not embrace any of the special features of the Rochdale system of co-operation.

THE FARMER'S ALLIANCE.

From 1886-1892 the Farmer's Alliance was active in propagating co-operative ideas among the southern farmers. It was a secret order having for its object the obtaining of social and commercial benefits for its members. Its members attempted to eliminate the middleman in both the sale and purchase of products. They established a system of trade discounts

¹Ohio Bureau of Labor Statistics, 1887, p. 26.

²Maine Bureau of Industrial and Labor Statistics, 1887, p. 195.

³Ohio Bureau of Labor Statistics, 1886, pp. 65-81.

⁴Minnesota Bureau of Labor Statistics, 1887-88, 243-245.

⁵Illinois Bureau of Labor Statistics, 1885-86, p. 460.

and purchasing similar to the plan pursued by the early Grangers. In 1890 it was said that the Farmer's Alliance Exchanges did a business of over \$10,000,000.00. The attention of the Alliance today is directed towards the establishment of co-operative elevator companies, to co-operative selling rather than to co-operative buying.

In 1886 a very complete study of the co-operative movement in the United States was made by four graduates of the Johns Hopkins University under the supervision of Prof. R. T. Ely, now of the University of Wisconsin.¹ They found about eighty stores in the country organized upon a co-operative basis. Very inadequate returns were obtained, but thirty-two of the fifty-three associations in New England reported a capitalization of \$187,466.00 and twenty-two of these had 5,470 shareholders. Although thirty-three of them had sales amounting to \$1,609,401.00 nevertheless the estimated trade of the fifty-three associations has been placed at about \$2,000,000.00.² Seven of the stores outside of the New England States reported sales aggregating \$357,673.78.³ A great future for the development of co-operative institutions was predicted by the investigators, but they little realized the troublous times that were lying in wait for the establishments of which they wrote. In 1896 but thirteen of the fifty-three New England Associations were still in business while a majority of the remainder in other parts of the country had ceased to exist.⁴

It was in 1886 that the first attempt was made to form a federation of co-operative stores. In that year Geo. McNeil of Massachusetts called a meeting of the representatives of those known to exist in and around Boston. But eight responded to the call and nothing more than a mere informal discussion of the situation resulted.

During the next ten years there was but little activity in the co-operative world. Very few stores were started while many of those in existence were abandoned. From 1881-1895 only thirty-three stores had been chartered in New Jersey. Twenty-

¹History of Co-operation in the United States, Vol. 6, Johns Hopkins University, Studies in Historical and Political Science.

²Ibid., Vol. 6, 129.

³E. Bemis, U. S. Labor Bulletin, Vol. 6, 614.

⁴Ibid., Vol. 6, 615.

five of these began operations, and but ten of them were alive in 1895.¹ Two more failed before the close of that year.²

CO-OPERATIVE UNION OF AMERICA.

In the winter of 1894 plans were laid by R. H. Barlow and James Rhodes of Lawrence, Massachusetts, and Prof. F. J. Peabody and Rev. R. E. Ely of Cambridge, relative to the formation of a Co-operative Union similar to that which then existed, and still exists, in England. On September 5, 1895, an invitation was sent out to all of the known co-operative societies and a meeting was held sometime later. But twenty persons responded and it was decided to call another convention in December. This was done and on December 7, about sixty persons met at "The Prospect Union" in Cambridge and organized the "Co-operative Union of America." It was composed of fourteen societies, twelve of which were in the New England States, the other two being in New York and New Jersey. The sole aim of this association was that of education. It gathered and distributed information relating to the co-operative movement, assisted in the establishment of stores and in the strengthening of those already in existence. It published an official magazine for several years at Cambridge which was called "The American Co-operator," but with the decay of the Union itself, which shortly resulted, the magazine was abandoned. Very little in the shape of actual work was accomplished by the organization. It but paved the way for future experiments along the same lines.

THE AMERICAN CO-OPERATIVE UNION.

In 1896 an effort was made in Kansas to federate all the co-operative institutions into a state organization. With this end in view a meeting was called at Topeka in April of that year and steps looking to the formation of such an association were taken. At the conference, a sentiment developed relative to the formation of a national federation of all the co-operative

¹New Jersey Bureau of Statistics of Labor and Industry, 1895, p. 183.
²W. Bemis, U. S. Dept. of Labor Bulletin, Vol. 6, p. 614.

interests in the United States similar to that which existed in England. A call for a convention was issued, the same to be held in St. Louis, July 1, of that year. The Populist National Convention was held at the same place and time, and "the conjunction did not prove to be a happy one."¹ There was a very small gathering. Those who did come, came as individuals, and for the most part at their own expense.² Too much politics was in evidence. The conference resulted in the formation of "The American Co-operative Union," with Alonzo Wardall of Kansas as President, and Imogene Fales of New York as Secretary. Such an organization was ill timed. It was far ahead of the co-operative movement in this country and never held another meeting, nor accomplished anything of importance.

In 1896 a fairly exhaustive investigation of the status of "Co-operative Distribution in the United States" was made by Dr. E. W. Bemis for the U. S. Department of Labor.³ As a result of his work he found that there were some seventy co-operative stores in the United States, (twenty-two of them being in New England), with a possible membership of 19,000 persons. Including the 6,000 people who were members of the one hundred and thirty-four labor exchanges scattered over the nation, the number of individuals interested in Co-operative Distribution at this time reached a possible 25,000. The trade of forty-one of these stores which made partial returns amounted to \$2,372,000.00 for 15,707 members. The business of the associations in New England had almost doubled from 1886 to 1896 although the number of societies had been increased by the addition of but three establishments.

The next few years noticed a slow but steady growth of co-operative stores encouraged by no central organization or movement of any kind. It was a spontaneous development, arising from the demands of the people for lower prices upon goods purchased. In 1899 there were at least thirteen co-operative stores in Iowa organized and supported for the most part by the farming population of that State.

¹Cummings, *Quart. Jour. of Econ.*, Vol. 11, p. 273.

²E. Bemis, *U. S. Dept. of Labor Bull.*, Vol. 6, p. 626.

³E. W. Bemis, *U. S. Dept. of Labor Bull.*, Vol. 6, pp. 610-644.

THE PACIFIC COAST MOVEMENT.

It was in California that the first successful State Federation was formed. It was here that such great activity had been shown in the early years by the Grange and the Alliance, the latter in 1894 having obtained the passage of a law requiring that a person could hold but one share of stock and could have but one vote in any co-operative organization. This proved to be a great incentive to the co-operative movement and has been copied by the law makers of several other states.

On November 7, 1899, fifty persons representing every phase of co-operative activity met in Oakland, California, and formally organized the Pacific Coast Co-operative Union for the purpose of the study and propagation of co-operative ideas. The matter of establishing a wholesale house from which the co-operative stores could purchase their supplies was discussed, and a committee appointed and authorized to proceed with the work of organization. On January 1, 1900, the wholesale business of J. M. Moore & Son of San Francisco was purchased and re-named "The Rochdale Wholesale Company."

This company is owned and controlled by the individual retail co-operative stores scattered throughout California, Washington and Idaho. It has a paid up capitalization of \$60,000.00 divided into sixty shares of \$1,000 each. A retail company can hold but one share and have but one vote. Interest at the rate of 8% is paid upon capital stock, while the profits of the business are returned to the co-operative stores, comprising the company, in the shape of dividends proportioned upon the amount of their purchases. In connection with the wholesale business, a promotion department was organized which actively carries on the work of establishing new societies. These retail stores, in connection with the wholesale company, comprise what is known as "The Rochdale Family."

The Rochdale Wholesale Company has been very successful in business, the latest returns showing sales exceeding \$262,000.00 for the fiscal year of 1904 while for the month of January, 1905, they amounted to \$18,342.96.

The retail stores are also based upon the Rochdale system of "one person, one share, and one vote," the shares being placed at \$100.00 each.

It is safe to say that in no place is the co-operative movement so strong or so successful as it is upon the Pacific Coast. The principles of co-operation have been sown far and wide throughout these States, while the organization for the establishment and operation of co-operative stores has been made almost perfect. In this work the co-operators have been greatly assisted by the establishment of the "Co-Operative Journal" at Oakland, Cal., in January, 1900. This efficient magazine has proven to be so helpful to the movement that it has lately been changed from a monthly to a weekly periodical.

THE CO-OPERATING MERCHANTS CO.

In 1900 the "Co-Operating Merchants Company," of Chicago, Ill., was formally organized. This corporation, composed of over four hundred and fifty retail stores, some co-operatively¹ and some privately owned, serves as the medium through which these stores co-operatively purchase their supplies, buying direct from the wholesalers and manufacturers, thus saving the profits of the middlemen. The Company is the outgrowth of "The Associated Merchants, U. S. A." which began in 1896 as a co-operative buying agency for a large number of retail merchants. This corporation owns two wholesale houses, one at Chicago, the other at Toledo, Ohio, besides publishing its monthly trade organ, "Mixed Stocks." The \$100,000.00 capital stock of the company is divided into shares of \$10.00. Only active retail merchants can become members of the association and then only by the purchase of no more and no less than twenty shares of stock.

The method of doing business followed by the company, is very simple. Orders are sent direct to Chicago by the stores which are members of the association. These orders are then "bunched" by the agent, and sent to the wholesale houses and manufacturers. All goods are billed at regular wholesale

¹Only about twenty of the 450 members of the Company are co-operative stores.

prices, "the difference between what the members pay for goods and what the goods cost the Company is placed to the credit of each member upon his order. At the end of the year each member gets the sum of these differences on his purchases less his share of the expenses of doing business."¹ In addition to this an annual dividend of eight per cent is paid upon the capital stock.

The Company has been very prosperous and successful, having earned an average of 40% each year upon its outstanding capital stock besides accumulating a surplus of something over \$30,000.00.

THE RIGHT RELATIONSHIP LEAGUE.

In 1900 also the "Right Relationship League" was organized at Chicago by several men interested in co-operative enterprises. This association was formed solely for the propagation of co-operative ideas. It furnishes literature and an organizer to any group of men who desire to establish a co-operative society. The plan usually followed is to buy out a privately owned store and change it into a co-operative organization, the manager of the former being retained as the manager of the co-operative store. All of the associations established by the League are based upon what it calls, "True Co-operation the Real Thing." This consists for the most part in equality of ownership and voting power together with strict adherence to the principle of cash payments. It also provides for the accumulation of a reserve and an educational fund from the profits of the business. Eight per cent interest is annually paid upon the capital stock, while the profits of the trade are apportioned among the members upon the basis of the amount of goods purchased. The shares, only one of which can be held by each stockholder, are placed at \$100.00 and can be paid for in installments if so desired. Co-operative stores thus organized by the League always become members of the Co-operating Merchants Company of Chicago, which serves them as a co-operative wholesale house.

¹Circular of the Company.

STATE CO-OPERATIVE ASSOCIATIONS.

In 1901 the Kansas State Co-operative Association was formed. At the third annual meeting of the organization in 1904 the Secretary's report showed thirty-five stores in the Association transacting an annual business of about \$3,000,000.00. The majority of the stores declared dividends of eight per cent upon capital stock and from seven to eight per cent upon purchases.

The Washington State Co-operative Union was organized in December, 1903, as the result of the conference between fifteen co-operative associations. In 1905 the Union had twenty-four members, comprising creameries, stores, and several shingle mills.

These three States, Kansas, California, and Washington, are the only ones in which state Co-operative Unions exist. In the future we may expect to see more extensive developments along this line. Even at the present time active steps are being taken to organize the co-operative societies of several other States.

THE CO-OPERATIVE ASSOCIATION OF AMERICA.

In 1901 the "Co-operative Association of America" was organized under the laws of Maine with a capitalization of \$10,000.00, ninety per cent of which is held in trust by a corporation known as the "Co-Workers Fraternity Company of Boston." It is the intention of the former association to begin the co-operative organization of industry upon a small scale and extend its scope gradually through all fields of activity. By this means it is hoped to systematize the production and distribution of wealth in the United States so that the workers may obtain the full product of their toil. Mr. Bradford Peck, who is the originator as well as the President of the Association, "conceives that the business of life can be conducted as a World Department Store, each industry being a part of his co-operative scheme. Farms will be purchased, factories will be erected, supply stores will be built in the principal cities, and sample

stores in the towns, and under the system all those engaged in any capacity are partners in the enterprise and receive what their labor has produced."¹ Thus far, however, the association has confined its activities to the establishment of two co-operative stores (one of which has already failed), a restaurant, a publishing house, and several other enterprises. It is safe to say that the ideals of this organization will never be realized.

In 1904 the promoters of the "Co-operative Association" thought that it were better to make a start along more practical lines and herefore established what they called "The Co-operative Exchange of Boston." This is an association having two departments, an educational and an industrial bureau. The former is to "build up retail co-operative societies here and there," while the "industrial bureau will organize the wholesale and jobbing field so that there will be the least possible waste between the manufacturer and the consumer."² The real object of the "Exchange" to quote its Secretary is

"To obtain as many members among the retailers as possible. Then by consolidating trade and bunching the orders, these members will be able to secure advantages in the market which will give them corresponding advantages at home. We wish to have as many co-operative stores as possible for members of the "Exchange" and shall systematically encourage the conversion of privately owned stores into co-operative stores."³

We thus see that the organization is nothing more than a co-operative purchasing association composed both of co-operatively and of privately owned stores. It is also the desire of the society to assist in the establishment of co-operative societies and to such enterprises the "Exchange" will serve as a wholesale house, in which they will be part owners. The purposes and organization of this association are similar to those of the Co-operating Merchants' Company of Chicago, Ill. No reports concerning its success or failure have been given to the public as yet, but there seems to be no reason why such an association should not be very successful in co-operative purchasing for its members.

¹Extract from a circular issued by the Association.

²American Co-operator, Jan. 30, 1904.

³Letter from R. Albertson, Secy. of the "Co-operative Exchange."

In 1903 it was estimated that there were at least two hundred co-operative stores in the United States, representing 60,000 members and transacting an annual business of approximately \$7,000,000.¹

THE NATIONAL CO-OPERATIVE LEAGUE.

At the 1903 meeting of the Rochdale Wholesale Company on February 17, it was decided that steps should be taken to call a national convention of all co-operative institutions in the United States with the intention of establishing a closer relationship between the different societies. This call was subsequently signed by other associations and the date of the convention was set for June 16, 1904, at St. Louis. The purpose of the convention as set forth in the call was as follows:

"It is intended that an unincorporated federation of all the co-operative interests of the country be formed in order to promote business interests, educational and organization work, and arrange for the holding of annual congresses."

In connection with this conference, it was hoped that

"Each national division of the co-operative movement such as the Rochdale Co-operators, or the various farmers' associations, not already organized nationally, would meet at the same place and perfect their national organization along the same lines."

The advocates of the Rochdale method of co-operation were the only ones who made use of this opportunity to get together and organize a national society for a separate branch of the co-operative work. These representatives came from the Pacific Coast and from the North Central States, where the Rochdale Wholesale Company and the Right Relationship League respectively are the advocates of the Rochdale ideas. These delegates met Tuesday, June 14th, 1904, and after some discussion "adopted a definite system of organizing co-operative associations throughout the United States to the end that such associations shall be organized uniformly."² The system thus adopted consisted in the following requirements:

In the matter of the division of profits of each association,

¹ Prof. Frank Parsons, *Arena*, Vol. 30, p. 164.

² Minutes of the meeting as reported in "Mixed Stocks," Vol. 32, p. 75.

the rules and regulations shall provide that from the net profits each year—

First—Eight per cent shall be paid on share capital.

Second—A fixed per cent shall be set aside for educational and organizing purposes.

Third—The balance of the net profits shall be divided among the members or shareholders in proportion to their purchases.

The following matters also shall be fully provided for by uniform rules and regulations:

A.—A system of nominating and electing all officers, which will enable members to vote by mail, no voting by proxy—one person to have one vote only.

B.—Goods bought and sold for cash or its equivalent.

C.—Goods sold at prevailing prices—no cutting of prices.

D.—Regular employes to be paid fixed salaries; to be placed under bonds, and expected to become members.

E.—Retail stores each to own an equal interest in a co-operative wholesale store.

F.—Pure goods handled and full weights given.

G.—The interests of the producer, the capitalist, and the customer harmonized by treating each with fairness and justice.

A national association was also organized by these delegates which in the future should have charge of the educational and organizing work now being carried on by the Right Relationship League and the Rochdale Wholesale Company. This association was to be known as "The National Co-operative League." So far as we have been able to learn, it has done nothing towards the propagation of co-operative ideas up to the present time.¹

Two days later the National Convention assembled. A large number of delegates were present from all parts of the United States and the various phases of co-operation were presented by different speakers and fully discussed. Nothing further was done than to appoint a committee which was to call another national conference in 1905. A bureau was also inaugurated which was to gather statistics relating to the status of the co-

¹ June, 1905.

operative movement in America. Thus far no report has been made concerning the results of any investigations which may have been carried on, and it is doubtful if any ever will be made.

PRESENT DAY CONDITIONS.

We now come to a hasty review of the conditions in the co-operative world as they exist at the present time, June, 1905. After a most careful investigation covering somewhat more than a year, the names of 343 co-operative stores, engaged in business in this country were obtained. The following table explains the location of these establishments as grouped into their respective states.

State.	Number of Co-op. stores.	State.	Number of Co-op. stores.
Alabama		Michigan	18
Arizona	1	Minnesota	12
Arkansas	2	Mississippi	
California	68	Missouri	1
Colorado	2	Montana	4
Connecticut	4	Nebraska	1
Delaware		Nevada	
Florida		New Hampshire	3
Georgia		New Jersey	1
Idaho	4	New York	16
Illinois	8	North Carolina	1
Indiana	2	North Dakota	2
Iowa	17	Ohio	13
Kansas	34	Oregon	2
Kentucky		Pennsylvania	14
Louisiana		Rhode Island	
Maine	9	South Carolina	
Maryland		South Dakota	
Massachusetts	26	Texas	17
Tennessee	1	Vermont	2
Utah	5	Washington	22
Virginia		Wisconsin	30
West Virginia			
Wyoming		Total	343
Oklahoma	1		

From the above it will be seen that California leads the list with 68 stores followed by Kansas with 34, Wisconsin with 30 and Massachusetts with 26. Judging from the returns received from 170 of these establishments, the above 343 stores represent an estimated capitalization of \$8,520,809.00, a membership of approximately 76,146 persons, and a trade of about \$265,526,743.00. A more detailed discussion of the present status of the co-operative stores will be found in chapter VI of this monograph.

CHAPTER IV.

CAUSES FOR THE STARTING OF CO-OPERATIVE STORES.

The origin and development of co-operative stores in the United States have been radically different from their origin and development in other countries. In the latter they have been the result of a long series of evolutions, of natural consequences. The co-operators had no examples after which they could pattern. In England the attempts at co-operation sprang solely from local conditions, until with the establishment of the English Wholesale House and the Co-operative Union an effective means for a more thorough and active propaganda from a central source was afforded.

In the United States, however, the situation has been entirely different. With England as an example the co-operators have been enabled to avoid many of the greater difficulties concerning the organization of co-operative stores, but we find that even with this assistance, very few of the latter have survived for any length of time.

Then again we have seen that instead of being the results of local conditions they have usually been the consequences of various farm and labor movements, movements which as a rule had for their object the betterment of the conditions of a certain class in society. From 1830 to 1840 the subject of co-operative stores was quite prominent among the members of the New England Association of Farmers and Mechanics. During the remainder of the century it was successively agitated by the Workingmen's Protective Association, the New England Protective Association, the Patrons of Husbandry, the Sovereigns of Industry, the Knights of Labor, the Farmer's Alliance and various other organizations, each in its turn.

Underlying the work of these associations, however, were various causes which induced them to enter upon the establish-

ment of co-operative stores. First of all was the desire of the people for lower prices upon things purchased. Wages never have been as high as the wage earner would desire them to be. Consequently we find him very willing to try anything which will increase his purchasing power. That prices are unduly high is a foregone conclusion, as has always been the case throughout all times. High prices, however, are the result of many causes. The middleman who stands between the producer and the consumer must get his profits out of the sales of the goods. Besides this, he must obtain an amount which will enable him to pay all expenses of handling the goods. These, under a competitive system of distribution, are unreasonably and needlessly high, because of the wastes of advertising, delivery of goods, clerk hire, bad debts, the credit system, and many other sources of expense. The desire to eliminate the middleman above all else has been the object of all co-operators.

Sentimentalism, and the hypnotic effects of the word "Co-operation" together with the beautiful imaginative pictures painted by its advocates, will largely account for a large number of the co-operative ventures undertaken in the United States.

In Massachusetts the movement has always been very strong because a large number of persons who have settled in that commonwealth came from England, the home of Co-operative Distribution. They have learned of its benefits from the stores of their mother land and have always tried to introduce such enterprises into this country.

In Kansas the strength of the movement is due primarily to the ever recurring failures of the crops, which necessitates the saving of every penny by the farmer in order that he may be able to tide over a bad season, and secondly, to the oppression of the grain and railroad trusts.

The lessons in co-operation, or in the association of efforts, as taught by the Unions have also been of great value in the establishment of co-operative stores. In many cases the Unions are going into the work of starting such societies. This is true to a surprising extent among the miners of the Eastern States.

The conditions of these localities are peculiar and the causes for this unprecedented activity in the co-operative field are first and primarily the oppression of the company or pluck-me stores, and secondly, the articles upon "Co-operation" written by John Mitchell, President of the United Mine Workers Union, as the result of his travels through England and Scotland during the summer of 1904. These articles were printed in many newspapers and assisted greatly in spreading information concerning the value and the results of the English co-operative movement. Of late, however, the Unions have adopted the co-operative store as a weapon of self-defence in their fight against the Citizens Alliance. This latter organization is a union of retail merchants and professional men whose avowed intention is the destruction of the trade unions. The workers thus find that when they trade at a privately owned store, they are but paying money into the treasury of their enemies, for as a rule the majority of the retail merchants in a city of any size belong to the Citizens Alliance. Hence in order to protect themselves and at the same time attack the latter organization, the union men start co-operative stores. The best example of this is to be found in the case of late Colorado mining strike, during which the Western Federation of Miners undertook to follow this peaceable policy of attacking the Alliance, and were met with the violent and determined resistance of the members of that organization. W. B. Haywood, Secretary and Treasurer of the Federation describes the matter in a personal letter to the writer in the following manner:

"The stores that were originally owned by the Western Federation of Miners in the Cripple Creek District were started as an outgrowth of the Cripple Creek strike. Practically all of the men employed in the mining industry were members of the Western Federation of Miners. When the strike was inaugurated the merchants, nearly all of whom belonged to the Citizens Alliance, and who had conducted a credit business, immediately cancelled the credit of the miners who were on strike. It became necessary to establish a base of supplies, and as many of our members were employed on fair properties, or rather those that were being operated on the open shop system, the demand was made for a store where their supplies could be purchased from others than those who were our recognized enemies.

The result was that grocery stores and butcher shops were established by the Western Federation of Miners in the towns of Victor, Goldfield, Cripple Creek and Anaconda. The business of these stores flourished. Aside from being the distributing points for members of our organization, who were on a strike, they had a large cash business, which was not by any means confined to the members of the Federation who were employed, but enjoyed the patronage of all classes. Reports from the manager of the Victor store show that the earnings on capital invested was 98 6-7% for a term of operation of seven months and nine days. At the time this report was made, the average daily transactions amounted to \$439.66. It is useless to go into detailed report, as the stores are not being operated at the present time, as they were totally demolished by a mob of the Citizens Alliance, and the State Militia on the 6th day of June last (1904), so that in writing a report now, it would simply be a post mortem of a co-operative enterprise that was at one time destined to practically control the commercial interests of the great mining district of Cripple Creek. The successful management of the stores displayed the ability of the organization to conduct such institutions for the benefit of its members, and it will surely be developed to a greater extent in the near future."

The growth of Socialistic propaganda has also had considerable influence upon the later developments in the field of Co-operative Distribution. The advocates of Socialism have spread their doctrines over the entire country, have taught the people about the tremendous wastes of our present system of industry, and have preached the principles of co-operation to the masses as the only solution of the problem. The people have become awakened to the possibilities of co-operative effort and are willing to try the application of the principle in the matter of retail stores.

The movement which within the last five years seems to be setting in again towards the establishment of co-operative enterprises, arises from causes which for the most part are entirely different from those so prominent in the earlier part of the century. In the first place the rapid economic development, which we have been experiencing, has resulted in the growth of a social solidarity, the extent of which was unthought of in the history of the nation. Secondly, the formation of the trust

has made possible the charging of monopoly prices, and the consequent demand for lower prices. A feeling of economic dependence has also become more and more prevalent among the people. But back of this intangible growing spirit of co-operation stand the various organizations which are so active in moulding and directing this spirit into definite channels. In the East,¹ the Mississippi Valley,² and upon the Pacific Coast,³ associations exist for the purpose of founding co-operative stores and assisting in the management of the same.

Thus it is that born and nurtured in the farm and labor movements of this country, originating in a manner entirely different from that of the English stores, the American movement has at last reached the same stage, i. e., the stage wherein the co-operative movement is directed and assisted by means of various central educational organizations.

¹The Co-operative Exchange. See p. 36.

²The Right Relationship League. See page 34.

³The Rochdale Family. Page 32.

CHAPTER V.

CAUSES FOR THE FAILURE OF CO-OPERATIVE STORES.

“In this country Co-operative Distribution has been marked by almost utter failure. So universal has been the disaster that has followed all attempts to save money in purchasing goods of any kind, that the name ‘Co-operative Store’ has become to the ordinary mind a term of derision.”¹

The causes for this almost universal failure of the co-operative movement are manifold, and many of them are peculiar to this country and to the American people.

During our discussion of the history of co-operative stores in the United States, we noticed that in the past the greatest cause for the failure of these enterprises was the collapse of the farm and labor movements which gave them birth. The people, for the most part, were held together in the association purely because of their membership in these labor and farm organizations. With the decay of these movements it was but natural to expect that the bonds which held the members would be readily dissolved and the stores subsequently abandoned.

Furthermore, ever since its commencement, the co-operative movement in the United States has never been satisfactorily organized. Even to-day there are but three States which have any kind of an organization, and in none of these is it what it should be. Fought from all sides as are these co-operative enterprises, it is surprising to realize how few attempts have been made to organize them into protective associations. It is still more surprising to find the lack of information which exists among the co-operators relative to the whereabouts and the status of co-operative stores. Managers of associations in one county do not know that other similar organizations are to be found in

¹Barnard, Co-operation as a Business, p. 109.

the adjoining county, and when it comes to the matter of the co-operative movement in the State at large, there is no one who is able to give a complete list of the stores or their location. This is due primarily to the fact that the associations have no central organization to which they can make reports. In but three States are annual meetings held for the discussion of co-operative matters by the co-operators themselves, while but two attempts at holding a national convention have ever matured. The success of the latter in neither case was very gratifying. The convention at St. Louis in 1896 was very poorly attended and resulted in nothing whatsoever of lasting importance, while the 1904 convention in the same city accomplished but little more. Compare these feeble efforts with the solid organizations of the retail grocers, the jobbers, and the wholesalers! It is at the meetings of the latter associations that ideas are exchanged, experiences are "swapped," and plans for the defeat of obnoxious legislation are made. Nothing is more conducive to the progress of the commercial world than are these State and National conferences, and it is this thorough organization which is the greatest need of the co-operators of to-day as it has always been in the past. Annual conventions of co-operative societies should be held in each State. These associations should elect representatives to a National Co-operative Congress which should likewise be held each year. Without such conferences, without state and national organization, we may expect to see the continued failure of the co-operative movement.

Another cause for the many wrecks which lie strewn over the field of Consumers' Co-operation is the fact that in times past there have been no wholesale houses from which the retail co-operative stores could obtain their supplies. They have been forced to purchase their stock from the same wholesale house as the other retail merchants. The latter have consistently been successful in forcing the wholesaler to discriminate against the co-operative stores, and the consequence has been that the latter have had to pay higher prices for all goods purchased. In some instances the wholesalers have absolutely refused to deal with the co-operators. These things cannot help but result in placing the latter at a disadvantage in the sale of goods to

the public, and have been a fruitful source for the failure of these co-operative enterprises. To-day we have two wholesale houses for the co-operative stores, one of which is composed entirely of co-operative societies,¹ and the other but partly.² These have proved to be a godsend to the movement and have greatly assisted in its upbuilding. It is expected that many more of these wholesale companies will be started in the future as a result of the continued development of the co-operative movement.

The competition of "5 and 10 Cent Stores," department stores with their attractive advertisements and bargain days, trading stamp schemes, the low prices of the mail order houses, all have caused the death of many a co-operative society.

Then too there is that lack of the true co-operative spirit. We Americans are primarily a selfish people. We have always been very individualistic in our ideas and actions. We have been accustomed to enjoy the bounties of Nature, the privilege of taking up land, of shifting our residence to accept new employment if the conditions of the old were not satisfactory. All of these things have made us an independent people in most of our actions. We dislike to surrender our individuality to the will of the majority. We are also a heterogeneous people, composed of many nationalities, and as is the case with such nations, it has been a difficult task to weld the different races into a homogeneous body, a body which will work and labor towards an ideal or goal as one people. Likewise we lack that fixity of population, that neighborhood life, which is so characteristic of European countries. Our industrial system makes it necessary for the laborer to travel from place to place in search of work. Employment is never certain, and any man would be considered foolish who would invest a hundred dollars in an enterprise when he fully realized that perhaps within six months at the most, he might be forced to leave the city in search of employment. Those things, which we Americans lack, are common characteristics of European peoples among whom co-operation has been so successful. In England the child

¹The Rochdale Wholesale Co., San Francisco, Cal.

²The Co-operating Merchants Co., Chicago, Ill.

grows up and remains in the city of his ancestors, while the worker is content to enter any movement which will mean the saving of even a small sum to himself, for he knows that only by such means can he better his condition.

We are also an impetuous people. We lack patience. We dislike to wait for the accumulation of dividends, and would rather trade at those stores which give "green trading stamps." If the enterprise in which we are interested does not prove to be immediately successful, we lose heart and turn our energies to other fields. Success in co-operation, however, "requires the greatest humdrum patience." "Men must bear and forbear, persevere and learn wisdom by their mistakes. Courage to hold on through the first year or two of blundering and adversity is the price of permanent success."¹ But to us Americans "the prizes in the lottery of life are more inviting than the humble shilling on the pound of co-operative saving."² Our comparatively high standard of living has not forced us to acquire the penny saving habit so common among the Europeans. We would rather give profits to the merchant as his pay for the management of the retail business of America than bother ourselves with the intricacies of the matter.

As workers we fear to risk our small savings by investing them in enterprises which have so consistently proved to be nothing more than failures in the past. We also desire a wide choice of goods from which to pick whenever we enter a store. As Americans, we have not become accustomed to the simple and monotonous meals of the Europeans. We desire variety of food as well as variety of clothing. The co-operative stores, however, owing to their limited capitalization, cannot furnish us with this wide choice of goods. Hence we usually trade at other places even though we are members of the co-operative association. This lack of loyalty on the part of the members has been a very important factor in the failure of the co-operative movement in the United States.

Limited capitalization also makes it impossible for the store to buy in large quantities and thus take advantage of many

¹ A. Shaw, Vol. 1, Am. Econ. Assn. Pub., Monograph 2, p. 99.

² Peabody, Forum, Vol. 8, p. 283.

other of the business practices which can only come with an access to a large amount of capital stock.

In this country we have also noticed that the movement has been prevalent almost exclusively among the working classes and the farmers. In England, however, "co-operation has had the assistance of rank and wealth and education, advising, encouraging, and participating in its movements."¹ This has proved to be of incalculable aid to the co-operators in that country and it is to be regretted that such has not been the case in the United States.

The need of these societies in this country as educators, savings banks, places of meeting and recreation, which makes them so important a factor in the life of Europeans, is supplied by other activities. We have our excellent public school system, free libraries, public lectures, University Extension courses, and various other institutions through which the people are educated, while private savings banks, building and loan associations and insurance policies teach them the lessons of thrift and frugality.

The injection of the discussion of religion and politics into the meetings of the societies has likewise resulted in the dissolution of many of them.

The greatest cause of all, however, is the lack of business knowledge, so conspicuous among the co-operators. They take a man from his plow, like Cincinnatus of old, and place him in charge of a co-operative store expecting that he will carry on the business satisfactorily. Or as it often happens, a man will be called from behind a machine in the factory, after having had no business experience other than the payment of bills which his wife may have contracted, and placed behind the manager's desk. The usual result is that sooner or later the co-operators find that the person in whom they have placed their faith is either incompetent or dishonest, and the store is a failure. Poor business methods, injudicious purchases, over-stocking, wastes in weighing and many other practices, all of which bring disastrous results, are very prominent in the co-operative movement. These together with the universal ignorance of the co-

¹ Mass. Bureau of Labor Statistics, 1873, p. 350.

operators regarding business matters, and the lack of loyalty displayed by them, have been, in general, the fundamental causes for the failure of these stores.

Many of these causes will be, and are now being, removed by the evolution of the industrial world. Co-operative leagues are organizing the movement upon a firmer basis than ever before. Experienced managers are being engaged by the co-operators to conduct the business for them. Wholesale houses for the co-operative societies exist in the Mississippi Valley and upon the Pacific Coast. But above and beyond all, the rapid growth of social solidarity among the American people cannot help but give the movement a more solid basis, a basis upon which in future years it will be possible, though not necessarily probable, that the greatest co-operative movement, that the world has ever witnessed, may be raised.

CHAPTER VI.

PRESENT STATUS OF CO-OPERATIVE STORES IN THE UNITED STATES.

In order to obtain accurate statistics concerning the status of co-operative stores in the United States a schedule was sent out by this department to all the co-operative stores which were known to be in existence. This schedule contained questions inquiring as to the number of stockholders, the amount of capital stock, the aggregate sales and expenses, the kind of business in which they were engaged, the rate of dividends paid on purchases and on capital stock, and various other matters.

Many of the establishments refused to answer the questions asked, while others gave but partial returns. The accompanying charts contain the tabulations of the results of the investigation, the states being arranged in alphabetical order.

Gurneville Roch. Co., Gurneville	June, 1903	R. W. C.	5,500 00	55				3		
Healdsburg Roch. Co., Healdsb'g		R. W. C.	14,500 00	145	53,000 00	5,800 00	11	6	8	3
Hollister Roch. Co., Hollister										
Hopland Rochdale Co., Hopland									8	
King City Roch. Co., King City	Feb., 1903	R. W. C.	8,500 00	85	46,000 00	4,800 00	10	5	8	
Lakeport Co-Op. Assn., Lakeport										
Le Grand Roch. Co., Le Grand										
Lindsay Rochdale Co., Lindsay	Nov., 1904	R. W. C.	4,600 00	46				5		
Loomis Rochdale Co., Loomis	Jan., 1904	R. W. C.	3,600 00	36	14,000 00	1,800 00	13	1		
Napa Rochdale Co., Napa	Oct., 1903	P. H.	10,000 00	107	32,000 00	3,300 00	10	4	7	3
West Side Roch. Co., Newman	July, 1900	R. W. C.	6,400 00	64	10,000 00	1,000 00	10	2	10	
Newcastle Roch. Co., Newcastle	1902	P. H.	3,000 00	39						
Calif. Co-op. Meat Co., Oakland	June, 1904	B. U.	12,000 00	1,200	120,000 00	31,726 91	16	40		
Oakland Rochdale Co., Oakland										
Occidental Roch. Co., Occidental										
Penn Grove Roch. Co., Penn Gr'e	Aug., 1903	R. W. C.	5,000 00	52	85,000 00	37,000 00	43	3	5	1
P't Richmond R. Co., Pt. Richm'd										
Pomona Co-Op Co., Pomona										
Poplar Co-Op. Assn., Poplar	Mar., 1895	F. A.	4,100 00	41	11,159 14	993 58	9	1	7	6½
Porterville Roch. Co., Porterville										
Petaluma Roch. Assn., Petaluma										
Potter Valley Roch. Co., Pot. Val.	Jan., 1900	R. W. C.	5,400 00	54				2	8	5
Redding Roch. Co., Redding										
Sacramento Roch. Co., Sacram'to										
San Bernardino R. Co., S. Bern'o	Jan., 1903	R. W. C.	1,500 00	100	26,156 00	1,536 00	6	3	6	3
San Diego Roch. Co., San Diego										
San Francisco Roch. Co., S Fran.	Sept., 1900	R. W. C.	17,500 00	175	34,000 00	2,500 00	7	4		
Work'gm's Co-Op. C. Co., S. Fran.										
Rochdale Wholesale Co., S. Fran.	Jan., 1900	F. A.	60,000 00	60	262,000 00	14,000 00	5	10	8	
San Jose Roch. Co., San Jose	April, 1903	R. W. C.	10,200 00	102	24,652 43	3,599 24	13	5		
San Miguel Roch. Co., San Mig'	Jan., 1905	R. W. C.	5,300 00	53				3		
Santa Barbara Co-Op. Assn., S B.	Aug., 1899		4,400 00	110	12,736 74	2,318 63	16	3		
Santa Paula Co-Op. Assn., S P'ia	June, 1895	F. A.	10,000 00	60	50,000 00	4,000 00	8	4		
Santa Rosa Roch. Co., S'ta Rosa	Mar., 1901	R. W. C.	8,679 00	124	74,865 00	4,264 26	6	5	6	2½
Sebastapol Roch. Co., Sebastap'l										
Selma Rochdale Co., Selma	Feb., 1901	R. W. C.	8,000 00	80	32,760 00	4,500 00	14	3	8	5
Stockton Roch. Co., Stockton										
Tulare Rochdale Co., Tulare	Oct., 1902	R. W. C.	13,500 00	135	108,000 00	9,450 00	8	10	8	4
Turlock Rochdale Co., Turlock										
Vallejo Rochdale Co., Vallejo	July, 1901	R. W. C.	15,000 00	150	*15,502 30	*2,339 66	15	4	8	
Valley Ford Roch. Co., Val. Ford										
Visalia Rochdale Co., Visalia										
Watsonville Roch. Co., Wats'nv'e										
Wheatland Roch. Co., Wheatl'd										
Woodland Roch. Co., Woodland	Jan., 1904	R. W. C.	8,500 00	85	47,888 07	4,884 52	12	4	8	
Totals and averages			\$334,379 00	4,701	\$1,330,867 80	\$196,697 20	15	168	8	4

* Sales and expenses for only six months.

STATES,	Date of starting.	Cause of starting.	Capital stock.	No. of stock-holders	Sales.	Expenses.	Per cent. of expenses of sales.	Em- ployes.	Divi- dends on capital stock.	DIVIDENDS ON PURCHASES.	
										To members	To non- members
COLORADO—											
Co-Op. Store, Cripple Creek...	Sept., 1905								Per cent.	Per cent.	Per cent.
Co-Op. Mercantile Co., Salida...			\$6,200 00	208	†\$56,000 00			10	5		
Totals and averages.....			\$6,200 00	208	\$56,000 00			10	5		
CONNECTICUT—											
Co-Operative Store, Hartford....	April, 1893		\$7,000 00	39	\$51,511 04	\$7,254 71	13	8	35	2	
Co-Operative Store, Middleton...	Sept., 1903		3,000 00	79	20,000 00	2,650 00	13	5	5	2½	1¼
Univ. of Yale Co-Op. St., N Hav'n	1883		†	1,200	58,924 86	6,726 63	11	10			
Sovereigns Trad. Co., New Brit'n											
Totals and averages.....			\$10,000 00	1,318	\$130,435 90	\$16,631 34	13	23	20	2	1
IDAHO—											
Nez Perces Co. R. Co., Culdsecac.	May, 1904	R. W. C	\$10,000 00	35	\$12,000 00	\$1,200 00	10	2			
Co-Operative Store, Weston....	1893		10,000 00	20	10,000 00	1,200 00	12	2			
Co-Operative Store, Blackfoot...											
Co-Operative Store, Idaho Falls.											
Totals and averages.....			\$20,000 00	55	\$22,000 00	\$2,400 00	11	4	4		
ILLINOIS—											
McClellan Co. Co-Op. Co., Bl'm'g'n	Nov., 1904		\$10,000 00	325				6			
Univ. Co-Op. Store, Champaign.	Jan., 1905		1,100 00	550				3			
Col'd Men's Co-Op. Champ'n....											
Milw. Ave. Co-Op. Store, Chicago											
Le Claire Co-Op. Edwardvie	Oct., 1902		5,000 00	110	20,000 00	1,440 00	12	3	6	5½	2%
Co-Operative Store, Herrin....											
Co-Operative Store, Marion....											
Co-Operative Store, Pana.....											
Totals and averages.....			\$16,100 00	985	\$20,000 00	1,440 00	12	12	6	5	3
INDIANA—											
De Kalb Co. Co-Op. Co., Butler...	Nov., 1904	R. R. L.	\$35,000 00	75			9				
Employes Co-Op. Co., Garrett...											
Totals and averages.....			\$35,000 00	75			9				

† Sales for seven months. ‡ No capital stock.

IOWA—											
Iowa Roch. Co-Op. Ass'n, Albia	Aug., 1904	U. M. W.	\$3,500 00	255				6	*6	*2	*2
Farmer's Supply Co., Anita	Aug., 1903		2,500 00	90	\$30,000 00	\$4,000 00	13	5	6	6	
Co-Op. Store, Albert City											
Iowa Roch. Co Op. Ass'n, Bussey											
Farmer's Alliance Store, Cresco											
Co-Op. Ass'n, Dougherty											
Lucas Roch. Co-Op. Co., Lucas											
Scandia Trading Co., Marathon	May, 1889		3,420 00	48	43,341 57	2,400 00	6	4	15		
Farmer's Co-Op. Sup. Co., Milford	Sept., 1904		10,000 00	85				1			
Minburn Co-Op. Ass'n, Minburn	Mar., 1891	F. A.	2,500 00	120	60,000 00	3,433 84	5	5			
Co-Op. Store, Muscatine											
Nassau Co-Op. Store, Nassau											
Farmer's Supply Co., Newell	June, 1896		10,000 00	208	31,000 00	2,405 00	8	3	6	10	
Co-Op. Store, Delwein											
Farmer's Co Op. Soc., Rockwell	Mar., 1889										
Sherman Mer. Co., Sherman	Feb., 1904		5,000 00	33	12,000 00	1,000 00	9	2	45		
Co-Op. Store, Solberg											
Totals and averages			\$36,920 00	839	\$176,341 57	\$13,238 84	7	26	16	6	2
KANSAS—											
As-aria Co-Op. Ass'n, Assaria	Feb., 1903		\$5,000 00	120	\$25,000 00	\$1,900 00	8	4	10	4	
Barnes Co-Op. Ass'n, Barnes											
Patrons' Co Op. Ass'n, Cadmus	1876	P. H.	6,385 40	200	43,022 40	3,200 00	7	5	6	6	
Canton Co-Op. Ass'n, Canton	1892		16,000 00								
Co-Op. Society, Chicopee											
Columbus Co-Op. Store, Columb's											
Cunningh'm Co-Op. As., Cuni'gh'm											
Co-Op. Store, Dennis											
Vange Co Op. Store, Edgerton											
Garden City Co-Op. As., Gar. City											
Co-Op. Store, Gardner		P. H.	7,000 00	800	20,000 00	1,182 00	19	2	8	6	
Alliance Co-Op. Ass'n Green	April, 1890	F. A.	50,000 00	90	20,800 00	2,100 00	10	3	8	3	3
Gypsum Co-Op. Ass'n, Gypsum											
Reno Co. Co-Op. As., Hutchinson	1903		30,000 00	500	138,000 00	17,443 01	12	30	8	8	4
Industry Mer. O., Industry	1895	F. A.	4,000 00	35	26,000 00	1,500 00	6	4	17		
Kingman Co-Op. Ass'n Kingman	July, 1903		12,000 00	208	32,000 00	3,000 00	10	7	8	7	4
Kinsley Co-Op. Ass'n, Kinsley	July, 1904		10,000 00	110				8			3
Labette Co-Op. Co., Labette	June, 1902		5,000 00	89	12,000 00	1 000 00	8	2	13	3	
Lucas Co-Op. Ass'n, Lucas	Sept., 1904		25,000 00	50				10			
McPherson Co-All'nce Ex., McP.	Aug., 1890	F. A.	50,000 00	482	86,728 48	7,330 00	8	11	6	6½	
Moorehead Co-Op. As., Mo'reh'd	April, 1895		5,000 00	50	15,000 00	1,200 00	8	3	10	5	
Co-Op. Store, New Lancaster	Nov., 1904	P. H.	2,000 00	75				1			
Uni. of Kan Co-Op. St., Manhat'n											
Decatur Co-Op. Ass'n, Oberlin	Oct., 1902		50,000 00	400	104,000 00			10		6	

* Sales and expenses for only six months.

Arlington Co-Op. As., Lawrence.	July, 1884		272,689 34	3,900	254,426 67			50	4½	7	3½
German Co-Op. Ass'n Lawrence.	Feb., 1890		4,000 00	300	58,396 00	3,500 00	6	5	5	12	6
Lowell Co-Op. Ass'n, Lowell.	Mar., 1896	S. I.	17,135 00		204,689 55			25	4	8½	6
Riverside Co-Op. Ass'n. Maynard											
Mass. Dist. Co-Op. As., Medford											
Natick Co-Op. Ass'n, Natick											
Ger. Co-Op. Groc. Co., N. Bedford											
Newburyport Co-Op. Ass'n, New-											
buryport											
No. Adams, Co-Op. As., No. Adams	Feb., 1896		10,000 00	1,000	97,600 00	20,200 00	21	17	5	3	1½
Pittsfield Co-Op. Store, Pittsfield.	Feb., 1902		3,335 00	350	34,000 00	4,750 00	14	7	5	5	2½
Plymouth Rock Co-Op. Ass'n											
Plymouth	Feb., 1877		3,375 00		38,275 00			5	8	10	4
Quincy Co-Op. Ass'n, Quincy	Sept., 1902	C. A. A.	3,000 00	103	47,145 60	46,999 10	99	8		2	
First Swedish Co-Op. Store,											
Quinsigamond, Worcester.											
Reading Co-Op. Ass'n, Reading											
Co-Op. St., Silver Lake, Kingston	June, 1875	S. I.	1,825 00	16	11,500 00			1	5½	10	
Co-Op. Store, Springfield											
Totals and averages			\$338,759 34	6,314	\$856,032 82	\$113,649 10	33	130	6	7	4
MICHIGAN—											
Senewa Co. Co-Op. Ass'n, Adrian											
Allegan Co-Op. Ass'n, Allegan	April, 1896	P. H.	\$12,000 00	75	\$183,000 00	\$14,000 00	6	18	5		
Queen City Co-Op. Co., Battle Ck	Oct., 1903		5,000 00	50	15,000 00	2,180 00	14	3	5		
Co-Op. Stor., Brookfield											
Tamarack Co-Op. Co., Calumet	1889		31,000 00	900	379,118 00	3,380 00	12	50	8	10	
Eat'n Co. Co-Op. As., Eat'n Rap'ds	May, 1901	R. R. L.	25,000 00	125	26,000 00	25,901 40	14	25	10	5	2
Laborer's Commer. Co., Hancock	Aug., 1900		50,000 00	350	186,975 80	12,044 00	18	10	26		
Finnish Trading Co., Hancock	May, 1898		100,000 00	905	209,475 28	20,008 09	10		6		
Ishpeming Co-Op. So., Ishpeming	Feb., 1889										
Iron Mt. Co-Op. So., Iron Mt.	Dec., 1903	R. R. L.	25,000 00	160	30,000 00	1,101 75	17	6	8	2	
Jackson Co. Co-Op. Assn., Jackson	Mar., 1901		50,000 00	132	62,779 16	8,458 91	13			3	
Kersarge Co-Op. Co., Kersarge,											
L. Linden Co-Op. Assn., L. Linden											
Larium Co-Op. Co., Larium											
Lansing Co-Op. Assn., Lansing											
Jackson Co-Op. Assn., Napoleon											
Co-Operative Assn., Shelby	Mar., 1892		9,990 00	122	1,200 00	2,000 00	17	3			
Co-Operative Soc., Port Huron	Dec., 1901	R. R. L.	10,000 00	200	18,330 12	2,772 41	14	5	8	3	
Totals and averages			\$342,390 00	3,059	\$1,176,301 31	\$91,546 56	11	151	7	5	2
MINNESOTA—											
Scand. Co-Op. Mer. Co., Brainerd	Oct., 1904		\$1,460 00	62	\$21,050 45	\$2,587 51	12	3	10	10	
Farmers Co-Op. Mer. Co., Dassel	July, 1905		5,000 00	90							
Bell C. Co. Co-Op. Co., Goodhue	Dec., 1904			152				2			

STATES.	Date of starting.	Cause of starting.	Capital stock.	No. of stock-holders.	Sales.	Expenses.	Per cent. of expenses of sales.	Em- ployes.	Divi- dends on capital stock.	DIVIDENDS ON PURCHASES.	
										To members	To non- members
MINNESOTA—Cont.											
Kitson Co.F. Co-Op.Mer.,Hallow	Sept. 1904	R. R. L.	\$50,000 00	100	*\$25,000 00	*\$2,500 00	10	5	Per cent.	Per cent.	Per cent.
Farmers Mer. Co., Lake Crystal											
Pioneer Mer. Co., Lake Crystal											
Farm. Mer. Co-Op. Co., Montrose	Mar., 1905		12,500 00	96				5			
Co-Operative Store, Pequot.....											
Red Wing Co-Op. Co., Red Wing	April, 1904		900 00	60				3			
Rafferty & Week Co., Sp. Valley	June, 1903	R. R. L.	35,000 00	115	83,000 00	7,500 00	9	15	9		
Scan. Co-Op. M. Co.,Twc Harb'rs	May, 1904		100,000 00	168	100,774 09	14,773 61	14	13	10	5	
Zumbrota M. & E. Co., Zumbrota											
Totals and averages			\$207,860 00	843	\$229,794 54	\$27,361 12	11	46	3	8	10
MISSOURI—											
Uni. of Mis. Co-Op. St.,Columb's	Sept., 1900		\$25,000 00	1,498	\$20,414 00	\$1,865 91	9	3		10	
Totals and averages			\$25,000 00	1,498	\$20,414 00	\$1,865 91	9	3		10	
MONTANA—											
Gray Cliff Co-Op. St.,Gray Cliff											
Co-Operative Store,Great Falls.											
Co-Op. As. of W. Mont., Missoula	Jan., 1905		\$100,000 00								
Co-Op. Mer. Co., Red Lodge.....											
Totals and averages			\$100,000 00								
NEBRASKA—											
Co-Operative St , Grand Island											
Totals and averages											
NEW HAMPSHIRE—											
Franklin Co-Op Assd., Franklin											
German Co-Op. Assn.,Manchester											
Nashua Co-Op. Assn.,Nashua	May, 1902		\$1,000 00	130	\$10,000 00	\$1,200 00	12	2		2	
Totals and averages			\$1,000 00	130	\$10,000 00	\$1,200 00	12	2		2	

* For five months only.

NEW JERSEY—											
Vineland Co-Op. Assn., Vineland.....											
Totals and averages.....											
NEW YORK—											
Boonville Union, Boonville..... 1890 P. H..... \$5,000 00..... \$12,255 56..... \$1,000 00..... 8..... 1.....											
Co-Operative Store, Delhi.....											
Deposit Co-Op. Co., Deposit..... Feb., 1904..... 4,000 00..... 187..... 26,787 66..... 4..... 4..... 12.....											
Mohawk Val. Co-Op. Co., Ft. Plain.....											
Grangers' Exchange, Herkimer..... May, 1894 P. H..... 4,000 00..... 90..... 81,102 49..... 6,398 97..... 8..... 7..... 25.....											
Cornell Uni. Co-Op. St., Ithaca..... May, 1895..... 150..... 50,000 00..... 6,500 00..... 13..... 6..... 5.....											
Jamestown Co-Op. S Co., J'm's'n..... Feb., 1892..... 2,464 00..... 196..... 19,211 02..... 3,228 97..... 11..... 3..... 6..... 4½..... 2¼.....											
Leyden Union, Leyden.....											
Grangers' Mer Assn., Little Falls.....											
N. Y. Ind. Co-Op. So. N. Y. City..... Nov., 1902..... 25,000 00..... 1,102..... 65,576 72..... 19,902 03..... 33..... 12..... 4..... 4..... 4.....											
Poland Union Store, Poland.....											
Port Jervis Co-Op. Assn., P. Jervis..... Dec., 1877..... 10,000 00..... 98..... 57,342 90..... 7..... 4..... 5..... 5.....											
Co-Operative Store, Scottville.....											
Syracuse Un. Co Op. St. Syra'se..... 1899 P. H..... 3,000 00..... 14..... 13,000 00..... 1,400 00..... 11..... 2.....											
Leyden Union, Talcottville.....											
Leyden Exchange, Talcottville.....											
Totals and averages.....											
NORTH CAROLINA—											
Co-Op. Gr. Co., Wilmington..... Jan., 1905..... \$8,000 00..... 102..... 7..... 5.....											
Totals and averages.....											
NORTH DAKOTA—											
Steele Co. F. Co-Op. Mer. Co.,.....											
Finley..... June, 1904 R. R. L..... \$50,000 00..... 102..... *\$11,000 00..... *\$300 00..... 3..... 2.....											
Traill Co. Co-Op M. Co., Hatton.....											
Totals and averages.....											
OHIO—											
Ashtabula Co-Op. Co., Ashtabula.....											
Uni. Cincinnati Co-Op. Store,.....											
Cincinnati.....											
Capital City C. B'ys Co., Col'mbs..... Feb., 1905..... \$5,000 00..... 7.....											
Wood Co. Co-Op. Co., B. Green.....											
Co Op Coal Co., Dayton.....											
Ohio Co-Op. Store Co., East.....											
Palestine..... 1903..... 10,000 00..... 180..... 27,000 00..... 2,634 00..... 10..... 4..... 12..... 8..... 4.....											

* For only three months.

Union Co-Op. Assn., Sitka		June, 1904		10,000 00	140	*6,200 00			5	6	4	2	
Co-Operative Store, Wilkesbarre					\$15,360 00	413	\$40,267 72	\$30,867 61	93	11	6	4	2
Totals and averages													
TENNESSEE—													
U. of T., Co-Op. Store, Knoxville		1962		\$1,00 00	6	\$6,800 00	\$680 00	10	2	8			
Totals and averages					\$1,000 00	6	\$6 800 00	\$680 00	10	2	8		
TEXAS—													
U. of Texas Co-Op. Store, Austin		Aug.,	1896		350	\$14,202 00	\$12,000 00	14	7				
Co-Op. Assn., Bluffdale			1904	P. H.	\$10,000 00	100			11	1			
Burleson Co-Op. Assn., Caldwell			1881	P. H.	4,435 00	61	20,000 00	2,200 00	11	4	10		
Navarra Co. Far. All., Corsicana			1881	F. A.	28,000 00	550	55,000 00	4,100 00	8	4	7		
Dallas Co. Co-Op. Assn., Dallas													
Co-Operative Assn., Del Rio		Oct,	1883	P. H.	20,000 00	150	42,117 29	4,315 70	10	7	10	10	
Co-Operative Assn., Dublin			1879	P. H.	35,000 00	125	49,323 00	5,862 00	12	7	7		
Lee Co. Co-Op. Assn., Giddings													
Houston Co-Op. Co., Houston													
Fr'd'p Co-Op. Assn., Jones Pra'ie													
Angelina Co-Op. Assn., Lufkin													
Co-Operative Assn., Mesquite													
Southern Co-Op. Assn., Mart													
Elm Creek Co-Op. Assn., O' Daniel		June,	1886	P. H.	20,000 00	30			2	25			
Tex. R. Co-Op Assn., San Antonio			1905		100,000 00	215			5	8	8	4	
Timpson Co-Op. Assn., Timpson		1887	P. H.	20,000 00	35	9,000 00	1,800 00	20	3	10			
Southern Co-Op. Assn., Waco													
Totals and averages				\$235,435 00	1,616	\$189,642 29	\$30,277 70	16	40	11	9	4	
UTAH—													
Co-Operative Store, Ogden		1869											
Co-Operative Store, Provo					\$1,077,000 00	650	\$4,246,895 03	\$438,863 48	10	50	10		
Zions Co-Op Mer.Inst., Salt Lake													
Western Co-Op. Assn., Salt Lake													
Totals and averages				\$1,077,000 00	650	\$4,246,96 03	\$438,863 48	10	50	10			
VERMONT—													
Farmers & Mer. Ex., Battleboro													
Co-Operative Store, Rupert													
Totals and averages													

*For only three months.

Wauke'a Co. Co-Op. Co. Brookfield										
Brown Co. F. Co-Op. St., Green Bay										
Polk Co. Co-Op. Co., Lykens	Jan., 1905	R. R. L.	18,000 00	160				3		
Un. of Wis. Co-Op. Store, Madison	1894		1,000 00	1,631	48,762 07	4,788 91	10	5	41	10
Co-Op. Store, Manitowoc	April, 1903	R. R. L.	10,000 00	120	28,000 00	3,900 00	14	8	8	2½
Man. Co. Co-Op. Assn., Manitowoc	July, 1904	R. R. L.	50,000 00	70	*7,800 00	*2,050 00	26	5		
Co-Operative Store, New Auburn										
Co-Operative Store, Martel										
Co-Operative Store, Mt. Horeb	Nov., 1895	F. A.	11,000 00	200	32,000 00	2,500 00	8	4	8	2
Co-Operative Store, Ono	Aug., 1903	R. R. L.	50,000 00	450	11,500 00	1,050 00	9			
Co-Operative Store, N. F. du Lac										
Co-Operative Store, Sand Creek										
Dane Co. Co-Op. Co., Sun Prairie	April, 1905	R. R. L.	16,000 00	160				4		
Co-Operative Store, Superior										
Co-Operative Store, Timothy										
Co-Operative Store, Range	Mar., 1905	R. R. L.	20,000 00	60				2		
Co-Op. Grocery Store, Washburn	June, 1902		2,000 00	70	30,000 00	3,000 00	10	5	8	
Farmers' Alliance, Westby	May, 1890		12,000 00	92	47,000 00	4,200 00	9	6	10	
Co-Operative Store, West Salem										
Totals and averages			\$351,200 00	4,404	\$690,081 20	\$51,041 23	8	88	13	5

*For only six months.

In the following table, the total returns of each state are given, the states being arranged in geographical divisions; Group I, comprising the Eastern Manufacturing States; Group II, the Southern Cotton States; Group III, the Central Grain States; and Group IV, the Western Mining States.

States.	Total number of co-operative stores.		Number making report.		Total capital stock.		Total number stock-holders.		Total sales of all stores reporting		Total expenses.		Average per cent of expenses of sales.		Total number of employes.		Average dividends on capital.		Average dividends on purchases of members.		Average dividends on purchases of non-members.		
	*	Per ct.	*	Per ct.	*	Per ct.	*	Per ct.	*	Per ct.	*	Per ct.	*	Per ct.	*	Per ct.	*	Per ct.	*	Per ct.	*	Per ct.	
Group I.																							
Maine	9	3	3	\$26,100 00	3	689	3	\$98,398 20	3	\$10,372 19	3	11	3	13	3	6	2	6	1	3			
N Hampshire.....	3	1	1	1,000 00	1	130	1	10,000 00	1	1,200 00	1	12	1	2			1	2					
Vermont	2																						
Massachusetts	26	11	11	338,753 34	9	6,314	11	85,032 82	7	113,649 10	7	33	11	130	10	6	10	7	8	1	4	1	
Connecticut.....	4	3	3	10,000 00	3	1,318	3	130,435 90	3	16,631 34	3	13	3	23	2	20	2	2	2	1	1	4	
New York.....	16	8	7	53,464 00	7	1,837	8	325,276 35	6	38,427 97	6	11	8	42	5	9	5	6	3	4	4	4	
Pennsylvania.....	14	3	3	15,360 00	3	413	3	40,267 72	1	30,867 61	1	93	3	11	2	6	2	4	2	2	2	2	
New Jersey	1																						
Totals & av.	75	29	28	\$414,683 54	26	10,701	29	\$1,460,410 99	21	\$211,148 21	21	25	29	221	22	9	22	5	15	3			
Group II.																							
N Carolina.....	1	1	1	\$3,000 00	1	102							1	7			1	5					
Tennessee.....	1	1	1	1,000 00	1	6	1	\$6,800 00	1	\$680 00	1	10	1	2	1	8							
Arkansas.....	2																						
Texas.....	17	9	8	235,435 00	9	1,616	6	189,642 29	6	30,277 70	6	16	9	40	7	11	2	9	1	4			
Oklahoma.....	1																						
Totals & av.	22	11	10	\$239,435 00	11	1,724	7	\$196,442 29	7	\$30,957 70	7	13	11	49	8	10	3	7	1	4			
Group III.																							
Ohio.....	13	6	6	\$105,000 00	5	718	3	\$36,000 00	3	\$6,614 00	3	10	6	31		8		14		11			
Michigan.....	18	11	11	342,990 00	10	3,059	11	1,176,301 31	10	91,546 56	10	11	10	151	8	7	5	5	1	2			
Indiana.....	2	1	1	35,000 00	1	75																	
Illinois.....	8	3	3	16,100 00	3	985	1	20,000 00	1	1,440 00	1	12	3	12	1	6	1	1		3			
Wisconsin.....	30	15	15	351,200 00	15	4,404	11	690,081 20	10	54,044 23	10	8	14	88	10	13	4	5	1	10			
Minnesota.....	12	8	7	207,850 00	8	843	4	229,794 54	4	27,361 12	4	11	7	46	3	3	2	8	1	10			
Iowa.....	17	7	7	31,920 00	7	839	5	176,341 57	5	13,238 84	5	7	7	26	5	16	3	6	1	2			
Missouri.....	1	1	1	25,000 00	1	1,498	1	20,414 00	1	1,885 91	1	9	1	3			1	10					
Kansas.....	34	19	19	407,185 40	18	4,399	15	1,047,799 72	14	66,010 85	14	7	18	154	13	9	11	6	5	4			
Nebraska.....	1																						
North Dakota.....	2	1	1	50,000 00	1	102	1	11,000 00	1	300 00	1	3	1	2									
Totals & av.	138	72	71	1,577,255 40	69	16,922	52	2,993,614 34	49	262,421 51	49	9	67	513	40	9	27	7	9	5			

States.	Total number of co-operative stores.	Number making report.	Total capital stock.		Total number stock-holders.		Total sales of all stores reporting.		Total expenses.		Average per cent. of expenses of sales		Total number of employes.		Average dividends on capital.		Average dividends on purchases of members.		Average dividends on purchases of non-members.	
			*		*		*		*		*		*	Per ct.	*	Per ct.	*	Per ct.		
Group IV.																				
Colorado.....	2	1	1	6,200 00	1	208	1	56,000 00					1	10	1	5				
Montana.....	4	1	1	100,000 00																
Idaho.....	4	2	2	20,000 00	2	55	2	22,000 00	2	\$2,400 00	2	11	2	4						
Utah.....	5	1	1	1,077,000 00	1	650	1	4,246,896 03	1	438,863 48	1	10	1	50	1	10				
Arizona.....	1	1	1	150,000 00	1	72	1	36,000 00	1	7,000 00	1	20	1	5	1	6	1	1	1	1
California....	68	36	36	334,379 00	36	4,701	27	1,330,867 80	27	196,697 20	27	15	35	168	23	8	15	4		
Oregon.....	2	1	1	2,000 00	1	75								1	8					
Washington...	22	15	13	138,980 00	15	1,178	10	294,728 15	10	30,477 29	10	10	13	40	6	10	4	5	1	5
Totals & av.	108	58	56	\$1,837,559 00	57	6,939	42	5,986,491 98	41	\$675,437 97	41	11	53	727	32	8	20	3	2	3
Grand totals and averages.....	343	170	165	\$4,098,932 74	163	36,286	130	10,636,959 60	118	\$1,179,965 39	118	12	160	1,060	102	9	72	6	27	4

* At head of a column means that in this column is placed the number of Co-operative stores making returns upon that specific matter.

Inasmuch as this investigation was carried on in a manner similar to that of Dr. E. W. Bemis in 1896 for the United States Department of Labor,¹ let us compare the results of the two investigations in so far as it is possible to do so.

Three hundred and forty-three co-operative stores were found to be in existence in the United States at the time of this inquiry.²

One hundred and sixty-five reported a capitalization of \$4,098,932.74 or an average capital stock of \$24,842.01. In 1896 according to Dr. Bemis twenty-eight stores which made returns at that time, had a capitalization of \$454,175.65, or an average of \$16,220.56.

One hundred and sixty-three stores reported 36,286 members, or an average of 222, while in 1896 thirty-three associations reported 16,807 members, or an average of 509.3.

One hundred and thirty stores had sales aggregating \$10,636,959.60 or an average of \$774,130.45. From the returns of 118 stores with sales aggregating \$9,856,637.82 and expenses amounting to \$1,179,965.39, we learn that the average ratio of expenses of sales was 12 per cent. This is somewhat higher than that shown by the twenty-eight societies in 1896 which reported an average ratio of only 10.2 per cent.

The dividends which were declared upon capital stock in 1905 by one hundred and two stores averaged 9 per cent, while those on purchases for seventy-two associations averaged 6 per cent. Comparing the latter with the figures obtained by Dr. Bemis, we see that the dividends on purchases today are larger than those paid by the twenty-nine stores making returns to him. At that time the average rate was 5.15 per cent.

Very few of the stores pay dividends on purchases to non-members, but from the returns of twenty-two of them we learn that the average ratio thus paid was only 4 per cent.

One hundred and twenty-eight of these societies, reporting an annual business of \$10,562,680.44 had 1,386 employes, the average business per employe amounting to \$7,700.34. In 1896 the annual trade of twenty-eight stores having 223 em-

¹ Department of Labor Bulletin, Vol. 6, pp. 610-644.

² June, 1905.

ployes was \$1,586,345.40 or an average of \$7,113.66 per employe.

The majority of the stores are patronized to the greatest extent by the farmers. Out of one hundred and twenty-four stores reporting upon the question regarding whether the majority of their customers came from the city or the country, seventy of them answered from the latter, thirty-nine from the city, while fifteen stated that their custom was about equally divided between city and country.

The largest number of establishments deal in general merchandise and groceries, although we find one or two butcher shops, and several student supply stores.

Nearly all of the associations were begun upon a co-operative basis, very few of the stores having originally been privately owned.

Several of the societies have branch stores located in the same or nearby counties. The most important of these is the Johnson County Co-Operative Association of Olathe, Kansas, which has branch stores at Gardner, Edgerton, Stanley, and Prairie Center. This society was begun in 1876 by the Patrons of Husbandry, and has been very successful throughout its entire career.

The following table shows the number and location of branch co-operative stores in the United States:—

Main Store.	Branch Stores.
California Co-op. Meat Co, Oakland, Cal.....	Five branch shops in Oakland, and one in West Berkeley.
Modoc County Co-op. Assn., Alturas, Cal.....	Canby, Cal
Tulare Rochdale Co., Tulare, Cal.....	Pixley, Cal.
Farmer's Incorporated Co-op. Society, Rockwell, Ia.....	Cameron, Ia.
Iowa Rochdale Co-op. Assn., Albia, Ia.....	Bussey, Ia.
Scandia Trading Co., Marathon, Ia.....	Albert City, Ia.
Johnson Co. Co-op. Assn., Olathe, Kan.....	Stanley, Kan.
	Edgerton, Kan.
	Gardner, Kan.
Decatur County Co-op. Assn., Oberlin, Kan.....	Prairie Center, Kan.
	Two branches in same county.
Arlington Co-op. Assn, Lawrence, Mass.....	Five branches in the same city.
Jackson Co. Co-op. Assn., Jackson, Mich.....	Napoleon, Mich.
Eaton Co. Co-op. Assn., Eaton Rapids, Mich.....	Brookfield, Mich.
Laborers Commercial Co., Hancock, Mich.....	South Range, Mich.
Zion's Co-op. Mercantile Institution, Salt Lake City, Utah.....	Ogden, Utah.
	Provo, Utah.
Scandinavian Co-op. Mercantile Co., Two Harbors, Minn.....	Idaho Falls, Idaho.
Polk Co. Co-op. Company, Lykens, Wis.....	One in same city.
	Range, Wis.
Pierce Co. Farmer's Co-op. Company, Ellsworth, Wis.....	Centoria, Wis.
	Ono, Wis.
Manitowoc Co. Co-op. Assn., Manitowoc, Wis.....	Martel, Wis.
Farmer's Store Co., Bloomer, Wis.....	Timothy, Wis.
	New Auburn, Wis.
	Sand Creek, Wis.

Credit is seldom given by these societies, and then for only a short time. Market prices are usually followed and in no case are goods sold only to stockholders.

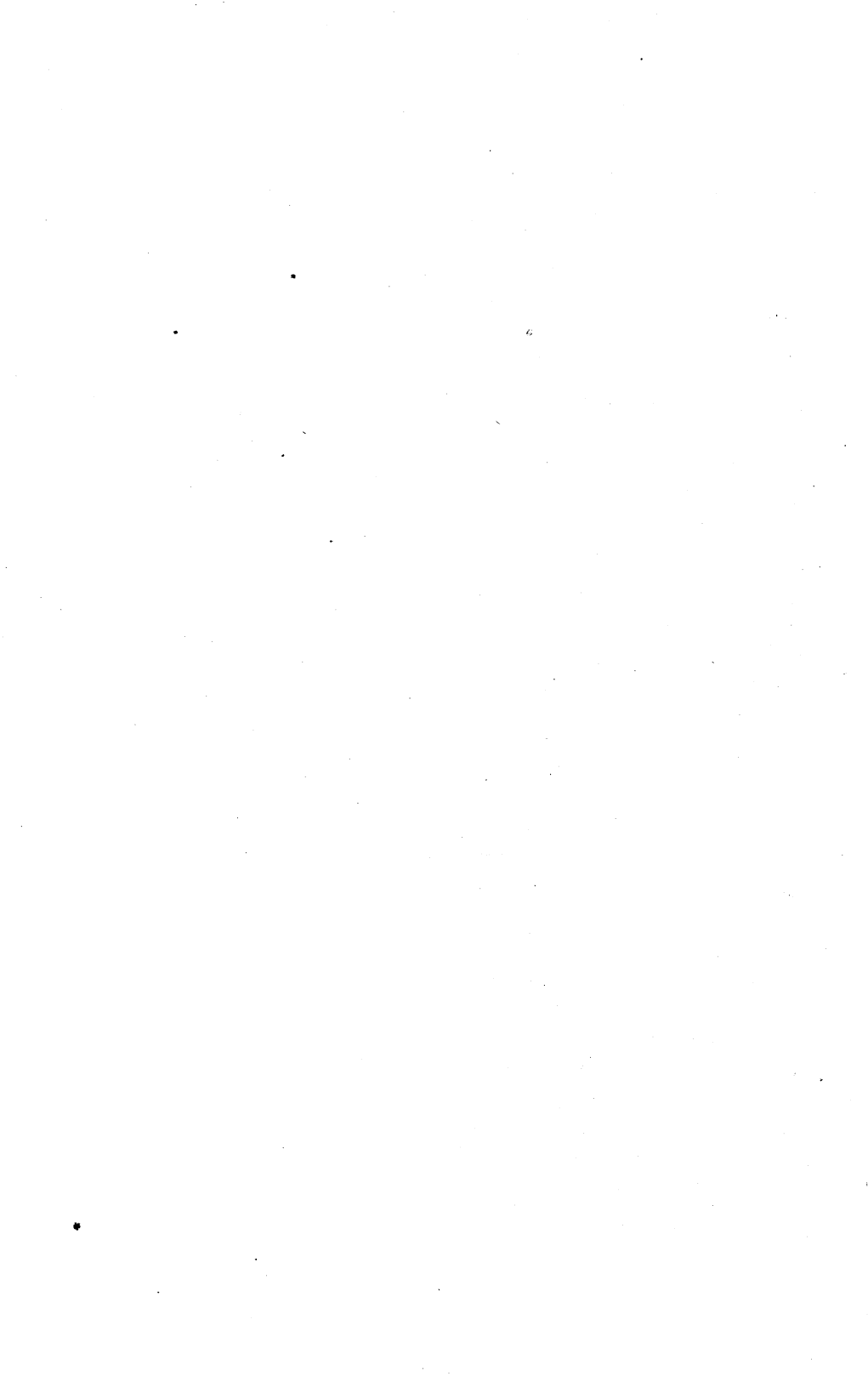
The effect of these establishments, in the majority of cases, has been the lowering of the prices of merchandise in their localities.

CHAPTER VII.

CONCLUSION.

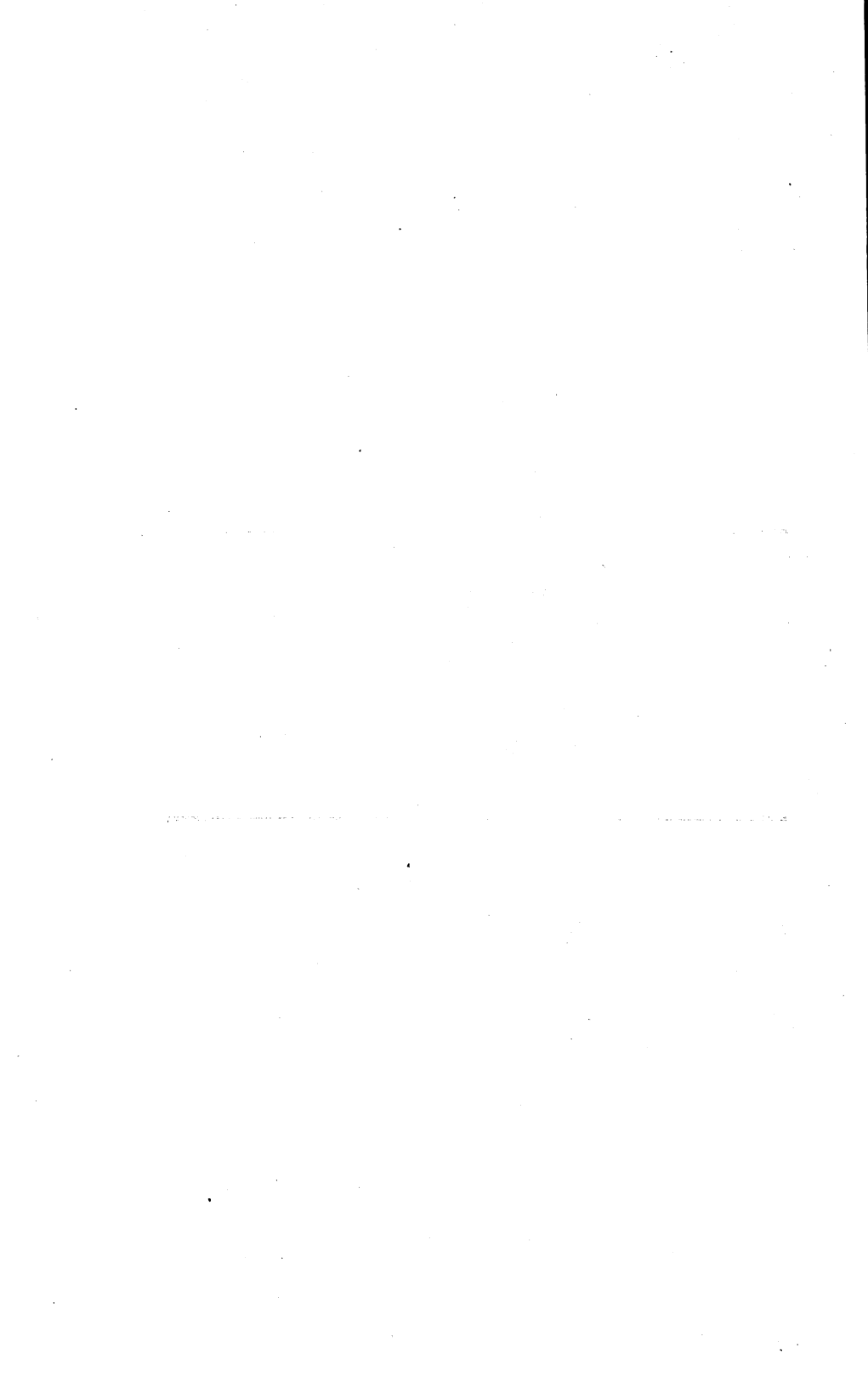
In our sketch of the history of consumer's co-operation in the United States we have seen how it has been a continual recital of ups and downs, of successes and failures, and for the most part, the latter. We have seen the establishment of co-operative stores made a mere incident of many national movements, rising into prominence with the growth of the movement itself and dying with its decay. Today, however, we note a renewed interest in co-operation. We see the establishment of these societies, spreading over the country until at the present time there are but few states in which it is known that no co-operative store exists. We see the organization of central societies, wholesale houses, national associations and leagues for the purpose of spreading co-operative doctrines and for the establishment of co-operative institutions. Never before was the co-operative movement so strong. Never did it give such excellent promise of maturing into greater and greater proportions, of bringing more people into its fold.

What the future will be, one cannot tell. Only years will reveal the outcome of present day tendencies. It is but barely possible that the principles, which the co-operators now apply to the ownership and operation of stores, will sooner or later be applied to factories, mines, workshops and other forms of industrial and commercial activity. Although this is the goal of the Rochdale Co-operators, the evidence which we have presented above makes it seem very doubtful if effective and lasting reform of the economic situation in the United States can ever come by this means.



PART II.

—
STRIKES.



THE STATISTICAL ASPECT OF THE STRIKE.

GROVER G. HUEBNER.

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CHAPTER I.

INTRODUCTION.

What is the strike? Least among the various controversies concerning the strike is this simple question. It is sometimes maintained that the strike is merely 'a cessation of work.'¹ Then this is corrected by holding that it is a "concerted cessation of work," thus bringing in the element of combination. The former is obviously incorrect, but the latter is generally accepted, particularly by the courts and in legal definitions, as it provides a basis upon which to justify the right to strike.²

This right to strike, however, cannot rest upon the right of combinations to cease work. When men strike "they are still the employer's workmen in some sense; they still refer to the shop as their shop and to him as their employer; and he is likely to speak of them as his workmen, both parties implying that there is still a tie of some kind between them."³ A strike involves; 1st, a temporary combination; 2nd, a temporary cessation of work; and 3rd, an attempt on the part of the strikers to retain the places which they have temporarily vacated.⁴ This last element makes the strike a wholly different matter than the cessation of work on the part of a combination for a certain purpose. To prevent other workmen from accepting the vacant position is not to assert, but actually to deny their right to cease working. The right to strike cannot, therefore, rest ethically upon the workmen's right to cease working in a concerted manner. It must rest upon their right to work, rather than upon their right not to work. In other words, the

¹Standard Dictionary; Worcester's; Webster's International Dictionary; Webster's Collegiate Dictionary, etc.

²Eddy on Combinations; Ency. Dict.; Imperial Dict.; Black's Law Dictionary; Anderson's Law Dictionary; Bouvier's Law Dictionary; Ray's Contractual Limitations; Cogley, Strikes and Lockouts; Arthur vs. Oaks, 63 Fed., 310, etc.

³Gilman: Methods of Industrial Peace, p. 251.

⁴Adams: Labor Problems.

strike is a manifestation of the doctrine¹ that a workman, at least to some extent, "owns his job." The strike "may be defined as a temporary combination of wage-earners to affect some purpose—by a concerted cessation of work during which active measures are taken to retain the places which they have temporarily vacated."²

It is of interest to determine the course of development of this institution, as it is without doubt the foremost method³ employed by the laboring classes to improve their conditions as well as to enforce other demands. Aside from the boycott, the strike and the threat to strike are the chief weapons employed in forcing concessions from the employer. Undoubtedly, many advantages are peacefully secured, and, while some of these are made voluntarily by conscientious employers, it cannot be denied that others are the result of fear on the part of the employer. Such concessions must be regarded as the indirect result of the strike. It is a means both for good and for evil; and being intimately connected with both the defensive and aggressive activities of the wage-earner, the history of its growth may throw some light upon several of the problems which are today the cause of discussion in the field of labor.

The purpose of this paper is to trace the development or growth of strikes through the medium of statistics. First, it is believed that a careful analysis will disprove some of the current conclusions relative to these statistics; and second, it is proposed to draw positive conclusions respecting the development or growth of strikes. In some respects these conclusions must necessarily be more or less tentative, because most of the statistics cover a period of but twenty years and because numerous abnormal forces have undoubtedly influenced the movement even during this period. The positive conclusions must, therefore, be limited at least in some instances to what the movement has actually been in the past and to what it actually is today, rather than to what it will be in the future. Whatever

¹J. B. Clark in "Employers and Employees," edited by the Public Policy, p. 49.

²Adams: Labor Problems, p. 175.

³Mitchell: Organized Labor; Howell: Trade Unions—Old and New, p. 230.

movement the statistics may indicate for the future, must be regarded as to some degree tentative.

The primary purpose is to indicate what the evolution of strikes has actually been in the past and is today. It is, therefore, essential that the statistics be studied, not from the standpoint of a stationary condition, but from the standpoint of the movement which they designate from time to time. It is not so important to ascertain the total number of strikes that have occurred during a given period as it is to determine whether strikes are increasing or decreasing and of what that increase or decrease really consists. Again, while it is interesting to know how many strikes have been declared for one cause as compared with another during a given period of twenty years, it is more pertinent to **determine what "causes"** are increasing in importance and what "causes" are decreasing.

It is because of the failure to view these statistics from this standpoint of growth, that much of the misunderstanding has arisen. The statistics of "causes" of strikes in the United States for the period of 1881 to 1900 have, for example, been studied as a single bulk for the entire period.¹ It is then said that nearly three-fourths of all the strikes are due directly to demands concerning wages and hours. Such a statement, on the one hand shows nothing of value, and on the other is misleading. The real importance of these statistics of "causes" must be found in the *movements from time to time* which they indicate. Viewed as single bulk, they would indicate that causes other than **wages and hours need** hardly be considered; but viewed from year to year, they necessitate a very different and much more complicated conclusion.

The second reason why there is misunderstanding as to the statistics of strikes is found in the **method of statistical tabulation**. The existing strike statistics of the United States have for the most part been tabulated and explained upon several different occasions. In spite of that the simple proposition of whether or not strikes in the United States are increasing or decreasing is still a disputed matter. These statistics have

¹ Gilman; *Methods of Industrial Peace*; C. D. Wright, in *N. A. Rev.*, Vol. 174; U. S. Dept. of Labor, 16th Annual Rept.; U. S. Ind. Com. Rept., Vols. 17 and 19.

frequently been used to show that strikes do not increase absolutely and actually decrease relatively. Such results are due to the adoption of a statistical method which is not tenable.

The controversies relative to strike statistics may be grouped under three headings. First, there is the question as to the increase or decrease of strikes; second, the development of "causes" of strikes; and third, the effect of trade unionism upon the strike. In the treatment of these three controversies numerous minor points of difference will appear. To facilitate the treatment, the most important of existing strike statistics will be analyzed. When once the statistics have been arranged so as to show an evolution or historical growth, then their real significance and their bearing upon some of the most vital of "Labor Problems" will amount to something more than mere conjecture.

CHAPTER II.

THE INCREASE OR DECREASE OF STRIKES.

(a) The United States.

The statistics of strikes in the United States for the period preceding 1881 are very incomplete, since at no time during that period were attempts at accuracy made. The first strike recorded was a strike of bakers in 1741. Journeymen horse-shoers also struck as early as 1796, 1798 and 1799.¹ From then on, there were a few strikes almost every year, but the number was always small, never going above fifteen until 1867, when eighty-five were recorded. Even thus far, however, the figures seem to indicate an increase. After 1870 the number remained at a comparatively high level, relative to the years preceding, until 1880 when 813 were recorded. Undoubtedly these early statistics are very inaccurate, but the increase which they show is, in all probability, greater than the inaccuracy.

Generally, also, the strikes were small during this early period. To this there were some exceptions. Thus, in 1809 there was a strike of nearly 200 cordwainers. In 1831 sixty machinists struck at Taunton, Massachusetts; in 1832, 120 shipwrights and caulkers and 150 carpenters struck at Boston, and 500 or 600 laborers at New Bedford; 1834, "several hundred" laborers at Mansfield, Massachusetts, and a large strike occurred at the Bath Shipyards; 1835, about 500 machinists at Boston and 1,500 cordwainers at Philadelphia; 1836, "several hundred" New York tailors paraded the streets with banners; 1846, 1,200 handloomers at Philadelphia; 1847, 1,200 tailors at Philadelphia; 1848, 800 Fall River weavers and 2,000 Alleghany cotton operatives; 1850, 1,300 Fall River cotton mill operatives (for almost six months) and 700 or 800 railroad employes near

¹ U. S. Dept. Labor Rept., 1887, "Strikes and Lockouts."

Philadelphia; 1859, 800 shoemakers at Natick, Massachusetts, and two strikes of shoemakers at Philadelphia of 1,700 and 600 respectively; and in 1860 1,600 shoemakers struck at Lynn, Massachusetts. These are the best examples and specifically explain that, while most of the early strikes were small, there were some that more than equaled the size and duration of the average strike of today.

From 1870 to 1880 the statistics are also incomplete, but they show, without much doubt, that the number of strikes during this early period is increasing even more rapidly than the number of strikes. The gigantic railroad strike of 1877 shows that large strikes were already a possibility.

In the aggregate, 1,491 strikes were recorded before 1881. While this is not of itself significant, it is suggestive to notice that but six years later (1886) there were almost as many strikes in a single year (1,432), and, that ten years later (1890), there were many more strikes in a single year than have thus far been discovered for the entire period preceding 1881.

It is from 1881 to 1900, however, that detailed statistics have been collected by the United States Department of Labor¹ and it is from them that it is proposed to draw conclusions. Are strikes increasing or decreasing?

It will now be necessary to explain the statistical method here pursued as compared with the method whose authenticity previously was unquestioned. Owing to the great fluctuations in the statistics from year to year, it is impossible to judge a definite change or evolution by observing the actual number of strikes for each year. Table I, column (a) consists of these absolute figures; and it indicates no definite change either one way or another. To still further emphasize the need of some statistical method, these figures were plotted in the form of a curve, as is shown in Chart I. The fluctuations are clearly too great and too irregular to indicate either a general increase or decrease. This being realized by those who have drawn conclusions from these statistics, has caused the adoption of that method which a hasty examination would naturally suggest.

¹U. S. Dept. of Labor Rept., 1887, 1894 and 1901.

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Chart I.
The Number Of Strikes In The United States.

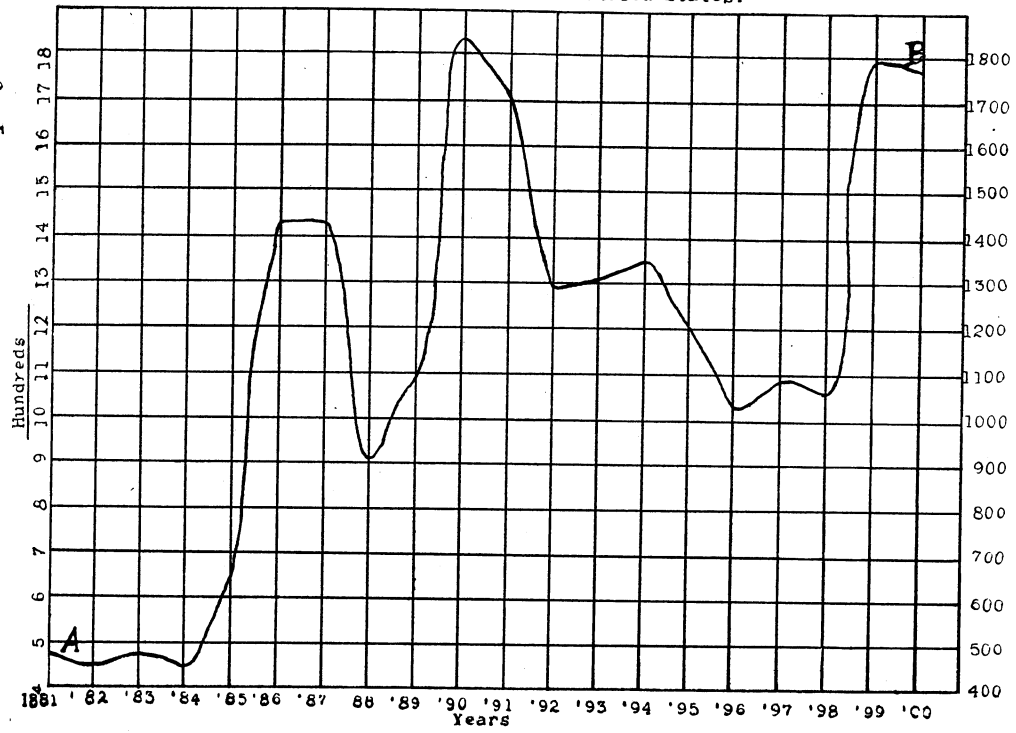


TABLE I.—*Total number of strikes.*

Year.	(a) Number of strikes.	(b) 5-year average.	(c) 6-year average.	(d) 4-year average.
1881.....	471	471		
1882.....	454	467.6	462.5	462.5
1883.....	478	498.2	461.5	461.5
1884.....	443	690.4	653.8	505
1885.....	645	886.8	814.6	749.5
1886.....	1432	972.4	890	989
1887.....	1436	1088.8	989.5	1104.7
1888.....	906	1326.4	1221.1	1212.2
1889.....	1073	1393.4	1399.8	1312.5
1890.....	1833	1365.8	1377.5	1382.7
1891.....	1717	1445.6	1355.6	1480.7
1892.....	1298	1500.4	1429.5	1538.2
1893.....	1305	1376.8	1452.8	1417.2
1894.....	1349	1258.6	1318.3	1291.7
1895.....	1215	1194.6	1211.8	1223.7
1896.....	1026	1144.8	1171.5	1167
1897.....	1078	1254.4	1253.5	1093.7
1898.....	106	1347.2	1325.1	1239.2
1899.....	1797	1479	1427.5	1404
1900.....	1779	1621	1580	1531

16th Annual Report of U. S. Department of Labor.

The common method has been to divide the total period into minor periods¹ and then, on the basis of these, to compute averages. Without a second thought, the period of twenty years has commonly been divided into four periods of five years each, so as to secure four averages. Then, because the last of these averages is lower than the one preceding, it is concluded that, in the aggregate, strikes are decreasing.

Now, such a method may, or may not, result in a correct conclusion. Bowley² shows that it is uncertain when applied to such matters as imports and exports, for the obvious reason that the result depends upon the particular number of years adopted as the basis of the averages. Adopt one period and the result will be an increase; adopt another and it will be a decrease. So it is in the case of strikes. Divide the period of twenty years into four minor periods and there is an apparent decrease; divide it into five periods and there is an apparent increase. Not suspecting the possibility of mistake, this method has commonly been adopted, but its fallacy is obvious. No method which depends upon the particular period chosen as the basis of the averages can be accepted, as there is no more logic in adopting one period than another.

¹U. S. Ind. Comm.; U. S. Dept. of Labor; Adams: Labor Problems.

²Bowley, Elements of Statistics.

To avoid this fallacy and at the same time overcome the great fluctuations of the curve shown in Chart I, the method commonly employed in the tabulation of statistics of imports and exports is here adopted.¹ This method consists of a mechanical process known as "smoothing;" i. e. the curve of Chart I is so drawn as to slightly increase the abnormal depressions and to slightly decrease the abnormal increases. The result is a curve which indicates the general movement of the number of strikes. To specifically illustrate:—column (b) of Table I consists of five year averages on the basis of the absolute figures given in column (a). Beginning with 1881, five years were averaged and that average adopted as the number of strikes for the year 1883. Then beginning with the year 1882, five years were again averaged and the result adopted as the number for 1884. Thus the entire column of twenty years (column a) was tabulated on the basis of five year averages.² Instead of having but four averages, as in the method usually pursued, there are here twenty averages,—one for each year consisting of the center and the two years above and below. Now these "smoothed" figures are plotted as in Chart II and the result is the "smoothed" curve (a—b). It mechanically avoids the abnormal increase and the abnormal decrease so as to indicate the general movement.

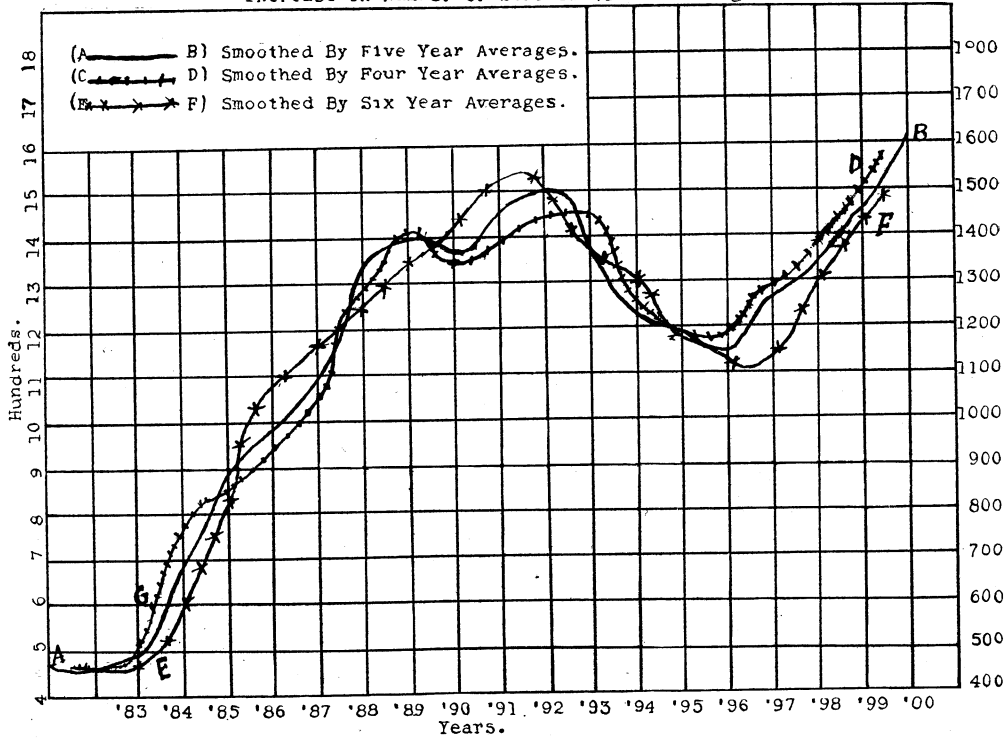
The curve shows, not a decrease, but a fairly rapid increase of the absolute number of strikes in the United States.

To show that this method does not depend upon the particular average chosen—as in the case of the old method—the columns (c) and (d) of Table I were computed according to the same method. They consist respectively of four and six year averages. Thus, beginning with 1881, four years were averaged and the result plotted between the years 1882 and 1883; the next average of four years between 1883 and 1884, etc., for the entire twenty years.

¹ Bowley: Elements of Statistics.

² In the case of imports and exports, where a large number of years is considered, the particular period adopted as the basis of the averages is secured by averaging the various maxima. But here this is impossible because of the shortness of the aggregate period and the lack of regular periodic fluctuations. The result is unchanged, however, in the above cases of strike, because it is practically identical, no matter what period is adopted.

Chart II
Increase In Number Of Strikes.(Smoothed Figures).



Curves (c—d) and (e—f), respectively, exhibit these averages. They fluctuate slightly above or below the curve of five year averages, but the increase is evident in each case. They demonstrate that no matter what average is adopted, the resulting curve shows that the absolute¹ number of strikes in the United States is increasing.

It will be noticed that this method does not carry the "smoothed" curve through the entire period of twenty years. In the case of the five year averages the curve ends with the year 1898. Now, to carry the curve to 1899 it was assumed that the number of strikes for 1901 was at least as large as for 1900 and the years immediately preceding. The number for 1901 was assumed to be the average of 1899 and 1900. This assumption is legitimate, as the number of strikes after 1900 was undoubtedly larger than during and immediately preceding 1900. The reports of the secretary of the American Federation of Labor show a large increase in the case of union strikes after 1900.² To extend the curve to 1900 the number of strikes for 1902 was assumed to be at least as large as for 1901. This assumption, again, is unquestionable.³

The increase of American strikes can be shown still more accurately. Table II presents the *number of establishments* affected by strikes for each year from 1881 to 1900.⁴ After being "smoothed,"⁵ as shown in columns (b) the curve (a—b) of Chart III was constructed. It plainly shows a rapid increase. It is to be noted that this curve showing the number of establishments affected by strikes is a better standard to judge by, than that showing the simple number of strikes. In the case of the number of strikes, the same prominence is given to a very small strike as to a very large one, while in the case of the number of establishments affected this fallacy is largely obviated. Chart III shows, therefore, not merely the increase in the number of strikes but also the increasing importance of strikes.

¹Absolute as distinguished from relative.

²Repts. Sec. Am. Fed. of Labor, 1901, '02, '03, '04.

³The smoothed figure for 1881 is the actual number and for 1882 is the average of the three years, 1881-2 and 3.

⁴U. S. Labor Report, 1901, "Strikes and Lockouts;" also U. S. Labor Bulletin No. 56.

⁵Smoothed as above explained.

Chart III.
Establishments Affected By Strikes.

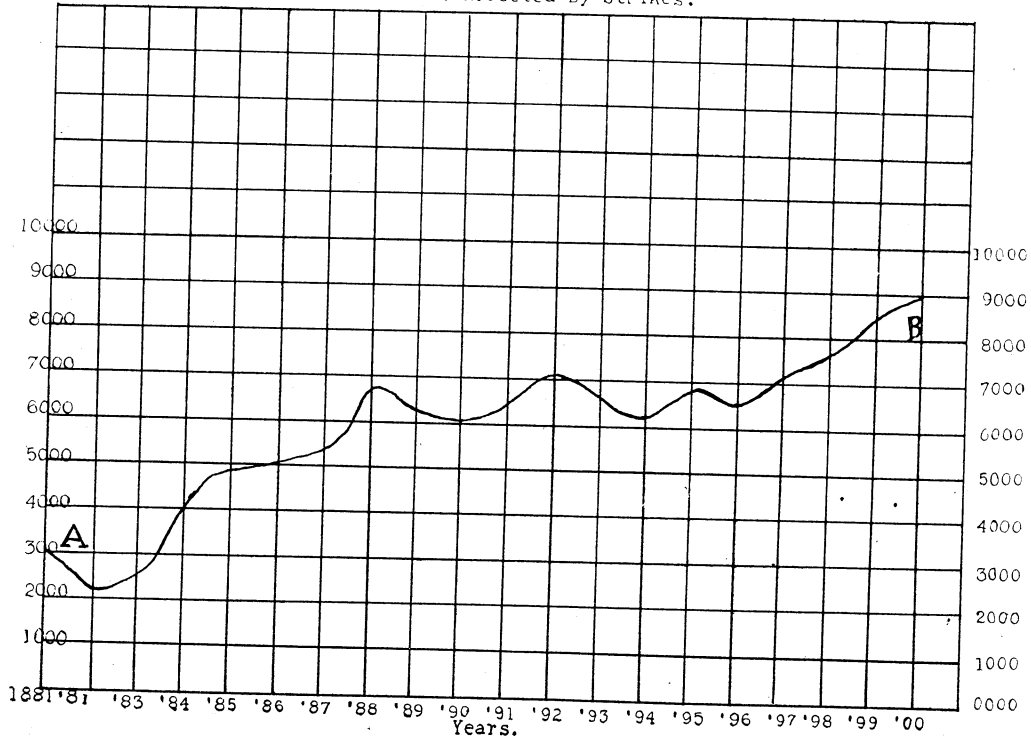


TABLE II.—*Establishments affected by strikes in the United States.*

Year.	(a) Establish- ments.	(b) Smoothed.	Year.	(a) Establish- ments.	(b) Smoothed.
1881.....	2,928	2,928	1891.....	8,116	6,284
1882.....	2,105	2,264	1892.....	5,540	7,166
1883.....	2,759	2,470	1893.....	4,555	6,676
1884.....	2,367	3,914	1894.....	8,196	6,145
1885.....	2,284	4,810	1895.....	6,973	6,736
1886.....	10,053	4,960	1896.....	5,462	6,586
1887.....	6,589	5,244	1897.....	8,492	7,211
1888.....	3,506	6,672	1898.....	3,809	7,666
1889.....	3,786	6,284	1899.....	11,317	8,630
1890.....	9,424	6,074	1900.....	9,248	8,988

16th Annual Report of U. S. Department of Labor.

But the statistics go still farther. Table III shows the *number of strikers* for each year from 1881 to 1900. It presents the figures both in the absolute and the smoothed form, the smoothed figures consisting of five year averages. Chart IV presents these figures in the form of the curve (a—b). It shows that *the number of strikers is increasing.*

Table III contains also the *number of employees affected by strikes* each year. When these, in the form of smoothed curves, are plotted, the result is the curve (c—d) of Chart IV. Again, there is an unmistakable increase. Now, it must be noted that these curves of the number of strikers and the number of employees directly affected by strikes are also more important than those of the simple number of strikes, for the same reason as in the case of the number of establishments affected. These curves, not only show the increase in the number of strikes, but the increasing importance of strikes on the side of labor, just as the increase in the number of establishments affected did on the side of capital.

Chart IV
 Number Of Strikers And Number Of Employees Affected By Strikes.

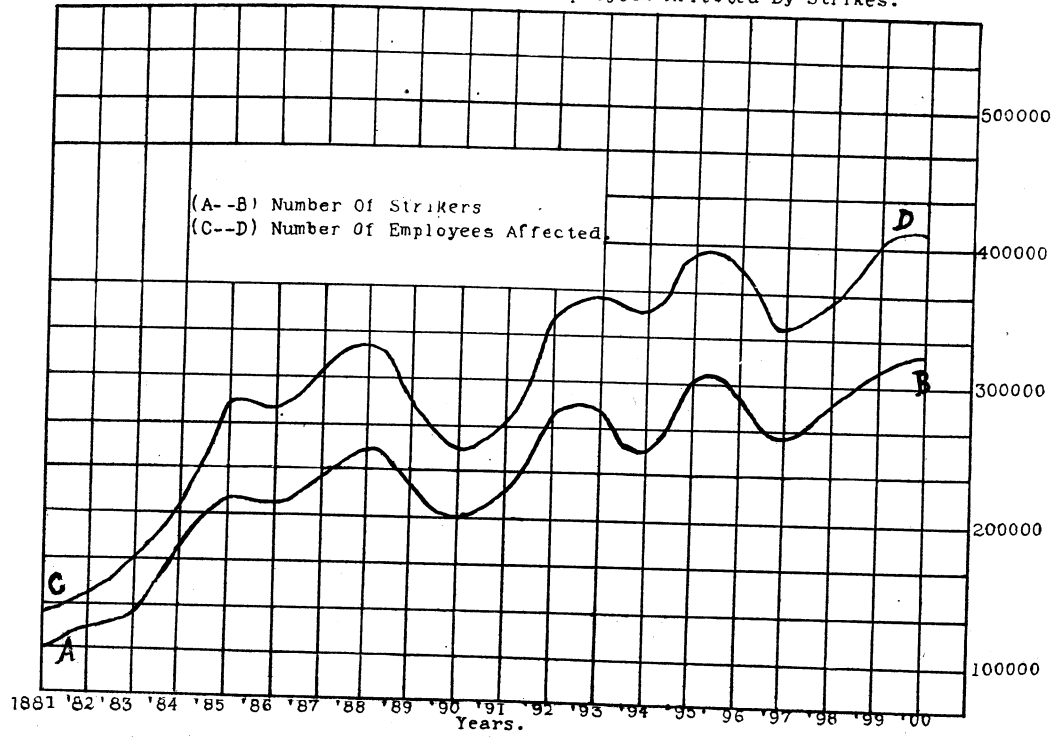


TABLE III.

YEAR.	EMPLOYEES AFFECTED BY STRIKES.		STRIKERS.	
	Actual No.	Smoothed.	Actual No.	Smoothed.
1881	129,521	129,521	101,070	101,070
1882	154,671	144,651.6	120,857	114,708
1883 ..	149,763	164,742.8	122,198	124,004
1884	147,054	240,447.4	117,313	185,221
1885	342,705	285,448.4	158,584	215,604
1886 ..	508,044	285,036.6	407,152	211,808
1887	379,676	305,537.6	272,776	229,359
1888	147,704	327,385	103,218	254,823
1889 ..	249,559	285,564	205,068	222,401
1890 ..	351,944	250,963.4	285,900	200,545
1891	298,939	275,605	245,042	218,903
1892	206,671	356,778.6	163,499	278,899
1893	265,914	364,870.4	195,008	278,868
1894	660,425	353,316.6	505,049	246,622
1895	392,403	393,660.6	285,742	300,436
1896	241,170	390,279.4	183,813	297,850
1897	408,391	341,408.8	332,570	258,492
1898	249,002	364,121.4	182,067	281,274
1899	417,072	408,400	308,267	315,304
1900	505,966	419,036	399,656	319,582

16th Annual Report U. S. Dept. of Labor.

To these figures may be added those of wage loss and number of working days lost through strikes. Table IV presents these figures both plain and smoothed. Chart V shows the total number of working days lost, in the form of a smoothed curve. From 1881 to 1892 there is a very great increase; from 1892 to 1899 there is no appreciable change; and in 1900 the figure is again large. In the aggregate the curve shows no great change. During the last ten years, at least, there is no general change in the number of working days lost because of strikes. Chart VI shows the figures of *wage loss* to employees because of strikes, in the form of a smoothed curve. Generally speaking the curve shows an increase in spite of the fact that wages were probably no higher in 1900 than in 1890. Had the rate of wages risen, the curve would undoubtedly show a great increase in the amount of wages lost by employees because of strikes. It is to be noted that these figures of the wage loss are very erroneous if used to show the financial loss caused by strikes, but that they may well be used to supplement the general figures concerning an increase or decrease of strikes. It is a recognized statistical principle that statistics which are obviously worthless as respects the condition of affairs at a given point may be often used to show a movement.

Chart V.
Working Days Lost Because of Strikes.

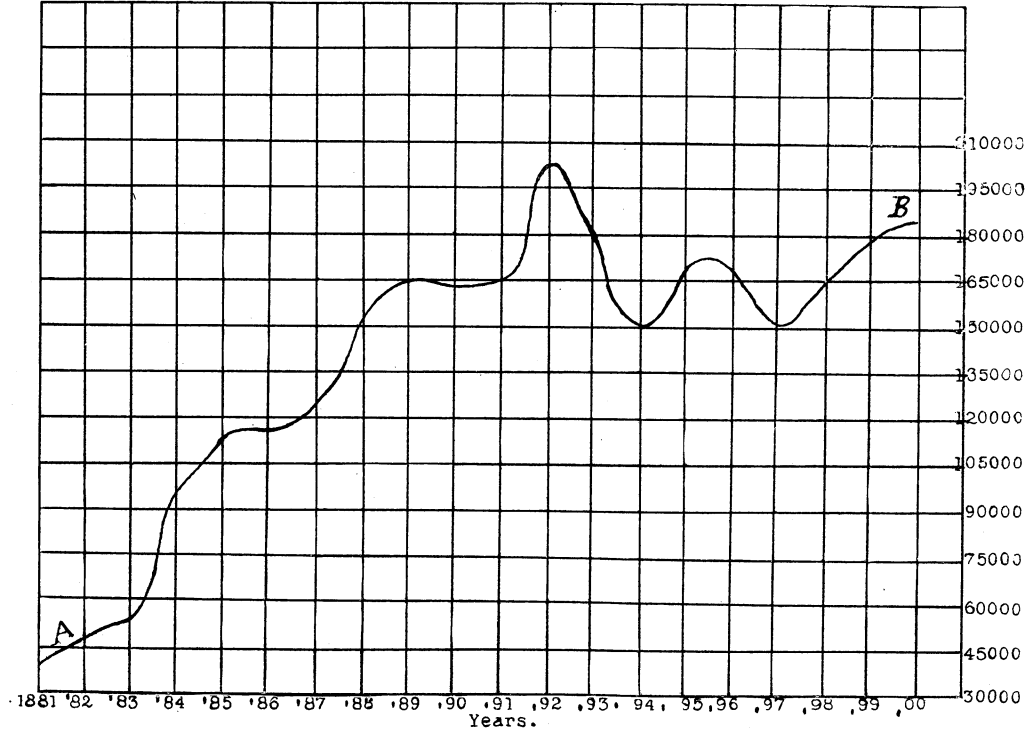


Chart VI.

Wage Loss Because Of Strikes.

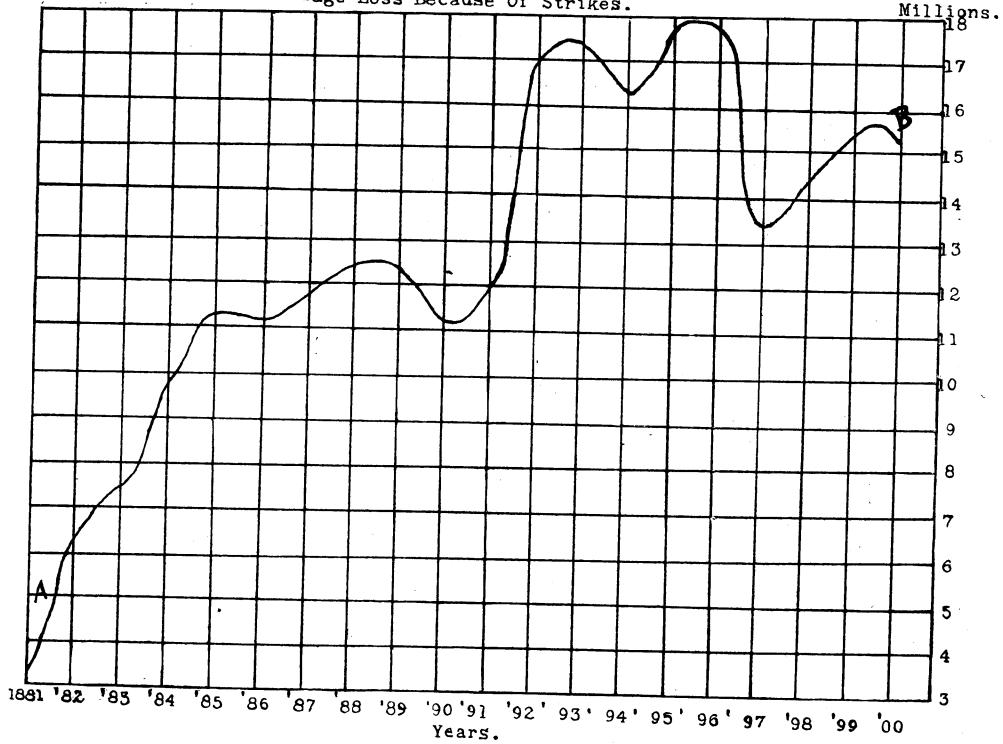


Chart VII.
Relative Increase of Strikes.

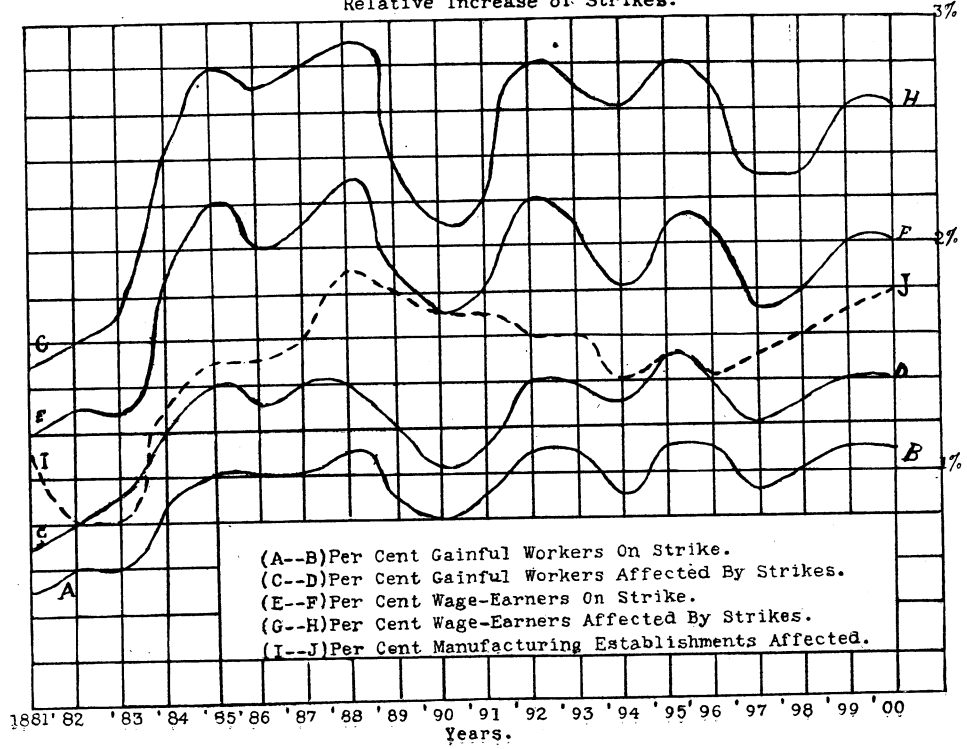


Chart VII.(Continued).

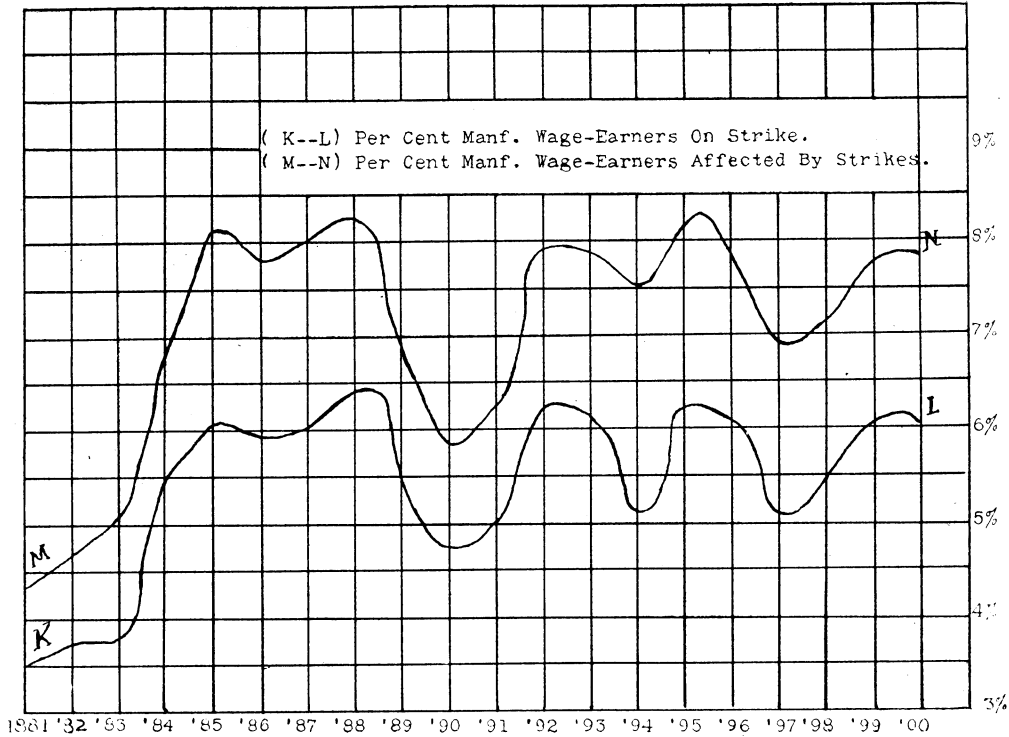


TABLE IV.—*Wage loss and working days lost.*

Year.	Wage Loss.	Smoothed.	Working days.	Smoothed.
1881.....	\$3,372,578	\$3,372,578	37,431	37,431
1882.....	9,864,228	6,530,762	46,088	46,802
1883.....	6,274,480	7,568,250	56,937	56,250
1884.....	7,666,717	9,492,250	72,110	95,807
1885.....	10,663,248	11,251,486	68,688	114,166
1886.....	14,192,453	11,252,140	235,253	117,080
1887.....	16,560,534	11,800,734	137,851	122,434
1888.....	6,337,749	12,443,152	71,261	154,277
1889.....	10,409,686	12,404,962	99,137	163,794
1890.....	13,875,338	11,247,380	227,901	162,111
1891.....	14,801,505	11,959,440	282,839	166,604
1892.....	10,772,622	17,140,505	129,416	199,867
1893.....	9,938,048	17,306,609	93,729	182,857
1894.....	37,145,830	16,399,858	265,454	150,264
1895.....	13,044,830	17,739,102	142,851	170,869
1896.....	11,098,207	17,758,949	119,870	169,177
1897.....	17,468,904	13,361,436	232,443	150,417
1898.....	10,037,284	14,420,786	85,269	164,455
1899.....	15,157,965	15,551,098	171,655	178,950
1900.....	18,341,570	15,407,271	213,038	170,931

U. S. Labor Dept., 16th Annual Rept.

These statistics show, therefore, that the number of strikes, number of establishments affected by strikes, number of strikers, number of employers affected by strikes and the amount of wage loss due to strikes are all increasing. In the aggregate, therefore, on the basis of all these statistics, the conclusion is that the *absolute number of strikes in the United States is increasing.*

More important than this, however, is the growth of strikes *relative* to the growth of industry. There may well be an absolute increase, but if that is due to the increase of the number of workmen there may at the same time be a *relative* decrease. It is usually held that there is such a relative decrease.¹ This conclusion, again, is due to the inaccuracy of the statistical method adopted.

It is essential to recognize, here, that it is wholly impossible to secure any rigidly accurate results; but it is submitted that if all the available statistics show much the same development, a sufficiently accurate conclusion can be drawn. Chart VII presents a series of curves for the entire United States on the basis of 20 years. Curves (a—b) and (c—d) graphically represent respectively the per cent of gainful workers who were on

¹Industrial Commissions; Adams: Labor Problems.

strike and who were directly affected by strikes for the years 1881 and 1900 inclusive. The method is briefly as follows: The actual number of gainful workers was obtained for the years 1880, 1890 and 1900.¹ Then by the simple statistical process of adding one-tenth of the difference between 1880 and 1890 to each succeeding year, the approximate number of gainful workers was secured for each year between 1881 and 1890 inclusive. In the same way the approximate number for each year between 1890 and 1900 was secured by adding one-tenth of the difference between 1890 and 1900 to each successive year. The number of strikes for the same years was then smoothed by five year averages as previously described. This yearly number of strikers was then divided by the number of gainful workers for the same years. The result is the per cent of gainful workers who were on strike each year. In the same way, the per cent of the gainful workers who were affected by strikes each year was computed. The actual figures, with per cents, are given in Table V.

TABLE V.

Year.	Per cent. gainful workers on strike	Per cent. gainful workers affected.	Per cent. mfg. workers on strike.	Per cent. mfg. workers affected.
1881	.5	.7	3.5	4.4
1882	.6	.8	3.7	4.7
1883	.6	.9	3.8	5.1
1884	.9	1.2	5.5	7.1
1885	1.0	1.4	6.1	8.1
1886	1.0	1.3	5.9	7.8
1887	1.0	1.4	6.0	8.0
1888	1.1	1.4	6.4	8.2
1889	.9	1.2	5.4	6.9
1890	.8	1.0	4.7	5.9
1891	.9	1.1	5.0	6.3
1892	1.1	1.4	6.2	7.9
1893	1.1	1.4	6.1	7.9
1894	.9	1.3	5.2	7.5
1895	1.1	1.5	6.2	8.2
1896	1.1	1.4	6.1	7.9
1897	.9	1.2	5.1	6.9
1898	1.0	1.3	5.5	7.1
1899	1.1	1.4	6.1	7.8
1900	1.1	1.4	6.0	7.8

U. S. Census 1880—1890—1900; 16th Annual Report of U. S. Dept. of Labor.

¹U. S. Census Reports, Occupations.

But recognizing the possible inaccuracy of these curves, more computations were made. Curves (e—f) and (g—h) show the per cent of the total number of wage earners in the United States who were respectively on strike and affected by strikes between the years 1881 and 1900. The figures for the total wage-earners are again only approximate—consisting of the workers in those industries which would be likely to be affected by strikes. The sources¹ and method adopted are identical with those described. The curves indicate no definite increase or decrease. In the aggregate, it seems that if there is any change it is in the direction of a slow increase; at least there certainly is not a decrease. (The actual figures are given in Table VI.)

To go still further, curve (i—j) was constructed in the same manner. It indicates the approximate per cent of the total manufacturing establishments in the United States affected by strikes. This curve² again indicates no decided change,—although a slight decrease seems perceptible. There is very plainly not a decrease in the strikes relative to the number of manufacturing establishments in the United States. (The actual figures are given in Table VI.)

Curves (k—l) and (m—n) are respectively the per cent of total manufacturing wage earners who were on strike during the same period and who were affected by strikes. As is indicated by a glance at the curves, they show a slight increase,—slightly more than in the case of the curves (i—j), (g—h) and (e—f), but somewhat less than in the case of the curves (a—b) and (c—d).

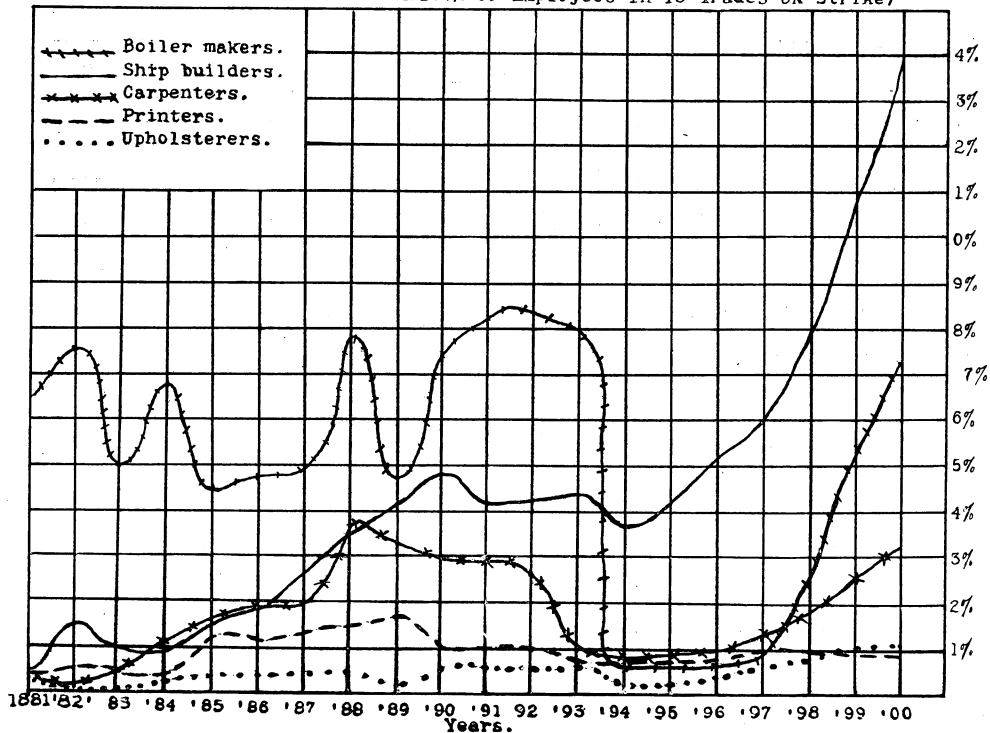
¹U. S. Census Reports, 1880, 1890, 1900; 16th Annual Report of U. S. Commissioner of Labor.

²This is necessarily inaccurate because, owing to the lack of statistics, the number of manufacturing establishments is not divided by the number of manufacturing establishments which were affected by strikes but by the number representing all establishments affected by strikes. It is sufficiently accurate to be one of a large series of curves.

Chart VIII.

Relative Increase Of Strikes. (% Of Employees In 15 Trades on Strike)

7-11



THE STATISTICAL ASPECT OF THE STRIKE.

Chart VIII. (Continued).

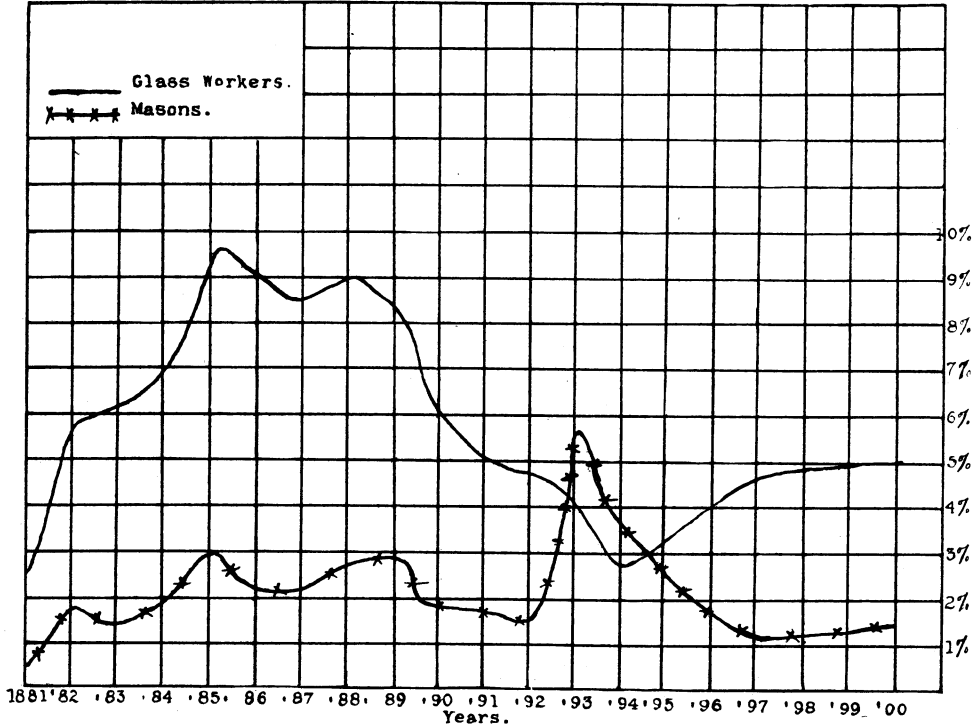


Chart VIII. (Continued)

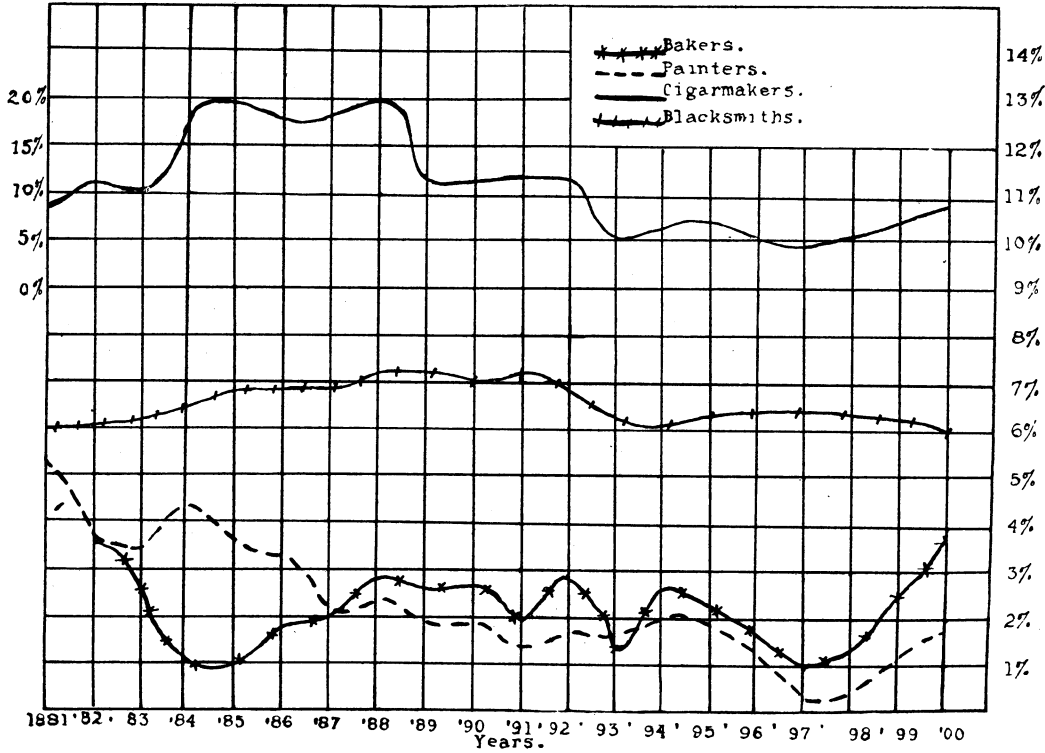


Chart VIII (Continued).

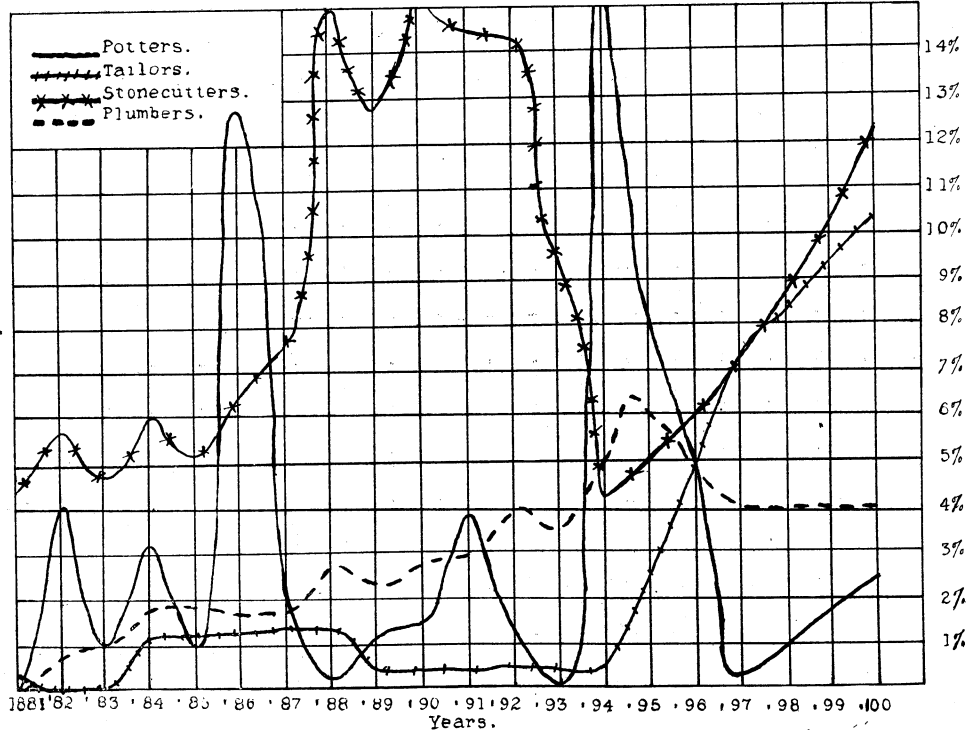


TABLE VI.

Year.	Per cent. wage-earners on strike.	Per cent. wage-earners affected.	Per cent. Mfg. establishm'ts affected.
1881.....	1.2	1.5	1.1
1882.....	1.3	1.6	.8
1883.....	1.3	1.7	.8
1884.....	1.9	2.4	1.3
1885.....	2.2	2.8	1.5
1886.....	2.0	2.7	1.5
1887.....	2.1	2.8	1.6
1888.....	2.3	2.9	1.9
1889.....	1.9	2.4	1.8
1890.....	1.7	2.1	1.7
1891.....	1.8	2.2	1.7
1892.....	2.2	2.8	1.6
1893.....	2.1	2.7	1.6
1894.....	1.8	2.6	1.4
1895.....	2.1	2.8	1.5
1896.....	2.1	2.7	1.4
1897.....	1.7	2.3	1.5
1898.....	1.8	2.3	1.6
1899.....	2.0	2.6	1.7
1900.....	2.0	2.6	1.8

(1) U. S. Census 1880—1890—1900; 16th Annual Report of U. S. Dept. of Labor.

Since all the curves show much the same result, it seems reasonable to believe, even in spite of admitted inaccuracies, that there is a slow relative increase in the general level of strikes in the United States. But very much more reliable results can be secured if separate trades are considered. When the computation is reduced to the basis of the small unit of a separate trade and is limited to only the purely industrial states, thus excluding all the agricultural states, the results denote some degree of accuracy. Table VII shows the result for 15 such separate trades.¹ For each it shows the per cent of the total number of workers who were on strike each year during the period from 1881 to 1900.

Chart VIII exhibits these per cents in the form of "smoothed" curves. Out of the fifteen curves tabulated, ten show an increase, three remain about stationary and two show a decrease. In the aggregate, therefore, on the basis of these trades, there is plainly a general increase in the relative growth of strikes.

Are strikes increasing in the United States? On the basis of the above statistics, the conclusion seems to be:

¹Tailors, blacksmiths, carpenters, printers, shipbuilders, plumbers (gas and steam fitters included), bakers, potters, upholsterers, masons (bricklayers included), cigarmakers, stone cutters (all classes of stones), boilermakers, painters (paper hangers and decorators included) and glass workers.

TABLE VII.—Per cent. of total number of workers on strike.

Industry.	1881.	1882.	1885.	1884.	1885.	1886.	1887.	1888.	1889.	1890.
Shipbuilders .....	.5	1.5	.9	.9	1.5	1.8	2.6	3.5	4.1	4.8
Carpenters .....	.4	.2	.4	1.0	1.6	1.8	2.	3.7	3.3	2.9
Printers .....	.4	.5	.4	.4	1.3	1.2	1.3	1.5	1.7	1.
Upholsters .....	.2	.06	.04	.3	.3	.4	.5	.5	.2	.6
Boilermakers	6.5	7.6	4.9	6.8	4.3	4.8	4.9	7.8	4.8	7.6
Potters .....	.0	.4	1.05	3.2	1.1	12.8	1.9	25	1.2	1.5
Plumbers .....	.0	.7	1.1	1.8	1.9	1.7	1.7	2.7	2.3	2.8
Tailors .....	.2	.08	.08	1.2	1.2	1.2	1.3	1.3	.4	.4
Stonecutters	4.47	5.6	4.7	6.1	5.2	6.6	7.6	14.9	12.7	15.1
Masons .....	.3	1.8	1.4	1.8	2.9	2.2	2.1	2.7	2.8	1.7
Bakers .....	.2	3.8	2.4	1.0	1.0	1.9	2.1	2.9	2.6	2.6
Glass-workers	2.5	5.7	6.1	6.8	9.7	9.0	8.5	9.	8.3	6.2
Blacksmiths .....	.009	.003	.01	.03	.04	.04	.04	.06	.0	.05
Painters	5.3	3.7	3.4	4.4	3.7	3.3	2.1	2.4	1.9	1.9
Cigarmakers	8.2	12.9	12.8	19.4	19.6	15.6	16.8	19.6	12.7	13.7

Industry.	1891.	1892.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.
Shipbuilders	4.2	4.1	4.3	3.6	.....	.....	6.0	.....	.....	14.0
Carpenters	2.9	2.6	.9	.7	.....	.....	1.2	.....	.....	3.3
Painters	1.	1.	.7	.7	.....	.....	.9	.....	.....	.8
Upholsters .....	.6	.5	.7	.2	.....	.....	.6	.....	.....	1.0
Boilermakers	8.2	8.3	7.9	.6	.....	.....	.7	.....	.....	7.3
Potters	3.9	1.4	.0	50.2	.....	.....	.3	.....	.....	2.4
Plumbers	3.	4.	3.5	6.2	.....	.....	4.0	.....	.....	4.0
Tailors .....	.4	.5	.3	.5	.....	.....	7.4	.....	.....	10.3
Stonecutters	14.6	14.3	9.7	4.3	.....	.....	7.3	.....	.....	12.4
Masons	1.6	1.5	5.6	3.6	.....	.....	1.2	.....	.....	1.5
Bakers	1.9	2.9	1.4	2.6	.....	.....	.9	.....	.....	4.3
Glass-workers	5.1	4.8	4.	2.7	.....	.....	4.4	.....	.....	5.
Blacksmiths .....	.06	.04	.02	.....	.....	.....	.2	.....	.....	.0
Painters	1.4	1.7	1.6	2.1	.....	.....	.2	.....	.....	1.6
Cigarmakers	12.	11.6	5.2	7.7	.....	.....	4.7	.....	.....	8.0

The strike statistics for the years 1881 to 1894 are taken from the U. S. Labor Reports for 1887 and 1894. The statistics since 1894 are not in published form, but are available in the U. S. Labor Dept., at Washington. Owing to the expense, it was found possible to secure these figures for but two years (1897 and 1900.) This, however, is legitimate, as 1897 is one of the lowest years since 1894. The year 1900 was chosen as the other of the two years because it is the last year for which statistics are available.

The table includes but those ten states in which the strike has clearly gone beyond the experimental state; i. e. New York, California, Connecticut, Delaware, Illinois, Indiana, Massachusetts, Ohio, Pennsylvania and Rhode Island.

- (1) *Absolutely strikes are increasing rapidly.* The number of strikes, of strikers, of employees affected by strikes, of establishments affected by strikes and of wage loss are increasing.
- (2) *Relatively strikes are increasing slowly.* The more accurate statistics become, the more evident is this increase toward which they point. Obviously many elements enter into these statistics. The great decline of all the curves during the years 1893 and 1894 and immediately after is due to the crisis and cannot be regarded as a normal movement. In spite of all abnormal influences, it seems to be beyond dispute that with each return to normal conditions a *higher* general level is reached.

Taking all into consideration, the final conclusion must be that the general level of strikes in the United States is moving toward a higher plane.

(b) *Foreign Countries.*

While it is proposed to remain almost entirely within the United States, it may be well to glance at foreign countries. Owing to the fact that changes are there very marked, the simple figures, unplotted and "unsmoothed," are self-explanatory. Table VIII contains the number of strikes for the most important foreign countries. The figures show that the number of strikes in France, Austria and Sweden are increasing at a fairly rapid rate and that in Germany and Italy the increase is very rapid, while in England there is a very decided decrease. As to the other countries, Denmark, Belgium and Holland, the statistics cover too short a time to permit the tracing of a development. In all these countries, however, excepting England, Germany and Italy,¹ the evidence, other than purely statistical,² shows that strikes there are but a comparatively recent institution and that but a short time ago strikes were a very rare occurrence. This is true also in Switzerland, Hungary, Russia, Spain and Portugal.³

¹Brit. Royal Comm. of Labor, Foreign Repts., Vols. 5, 8, 3, 4, 9.

²Ib., Vol. 11; U. S. Consular Repts.

³Ib., Vols. 7, 11, 10, 9.

TABLE VIII.—Number of strikes.

Year.	(3) Gr. Britain.	(2) France.	(4) Austria.	(1) Germany.	Denmark.	(4) Italy.
1879						32
1880						27
1881						44
1882						47
1883						73
1884						81
1885			25			89
1886						96
1887						69
1888		110 ⁶	135 ⁷			101
1889	1,211*	321 ⁶	69 ⁷			126
1890	1,040*	313	70 ⁷			139
1891	906*	267	100 ⁸			132
1892	700*	261	101*	73*		110
1893	782*	634	172*	116*		131
1894	1,091*	391	172	130*		109
1895	876*	405	209	204*		126
1896	926*	476	305	483*		210
1897	864*	356	246	578*	77 (111*)	217
1898	711*	368	255	985*	136 (147*)	256
1899	719*	739	311	1,288	81 (98*)	259
1900	618*	902 ²	303	1,433	82 ⁴	383 ¹
1901	642*	523	270 ³	1,056		1,042
1902	442*	512	261 ³	1,060	65*	
1903	387*	567 ⁵		1,374 ⁹		
1904						

Year.	Sweden.	Belgium.	Holland.	Barvaria.	Agric strikes in Italy.
1879					
1880					
1881					1
1882					2
1883					3
1884					10
1885					62
1886	12				17
1887	4				9
1888	12				5
1889	22				4
1890	107				8
1891	37			48*	24
1892	16			34*	10
1893	32			14*	18
1894	18			9*	8
1895	46			5*	7
1896	50	139 ¹⁰		16*	1
1897	90	130		37*	12
1898	134	91		35*	26
1899	62	104		25*	9
1900	104	146		49*	27
1901		107 ⁴			629
1902			115 ¹¹		902
1903			128 ¹²		
1904		76	149 ¹²		
			41 ¹³		

*Strikes and lockouts.

†Not including mining strikes.

¹ U. S. Bulletin, Vol. 8 (1903), p. 376.² *ib.*, p. 1088.³ *ib.*, Vol. 52, p. 656.⁴ Mass. Bulletin, Vol. 21, p. 36.⁵ Labor Gazette, Canada, Dec., '04.⁶ British Royal Comm. of Labor (Foreign Repts.), Vol. 6, pp. 36-7.⁷ Royal Comm., Vol. XI, p. 65.⁸ U. S. Bulletin, No. 56, p. 261.⁹ *ib.*, p. 272.¹⁰ From N. Y. Brd. of Labor, No. 18 (1903), p. 344, for 1896 to 1900.¹¹ Mass. Bulletin, Vol. 25, p. 55.¹² U. S. Bulletin, No. 56.¹³ First half of 1904.

Strikes and Lockouts.

England—1889-1900, U. S. Report, p. 846; 1901-1902, Eng. Report of Strikes and Lockouts, Board of Trade (1903); 1903, Mass. Bur. Labor Bul. No. 34 (1904).
 France—1890-1900, U. S. Rep., p. 829; 1903, Mass. Bur. No. 30 (1904).
 Austria—1891-1900, U. S. Dept., p. 813.
 Germany—"Strikes and Ausfarrangen," 1899-19.2, 1892-1899; Official Organ of the Fed. Com. of German Trade Unions.
 Denmark—U. S. Dept., p. 826; 1897-1899-1902, Mass. Bur. No. 32.
 Italy—U. S. Rept., 1879-1899.
 Sweden—House Commons, Vol. 73 (1901).
 Belgium—Mass. Rept., No. 32, for 1903.
 Bavaria—House of Commons Rept., Vol. 73, p. 165.
 Holland—Mass. Bul. No. 34, p. 383.

From this, and the very appreciable number of strikes shown by the above statistics for recent years it follows that generally the number of strikes is increasing in every industrial country of Europe, except England. In England there is a very decided decrease since 1889. Before that there was an increase even in England,¹ but statistics for this early period are not available.

Comparing the strikes in the different countries, it appears (according to the last year for which statistics are given) that there are more strikes in the United States than in any other country—there being 1779 in 1900. Italy² follows with 1672; Germany third with 1374; France fourth with 567; England fifth with 387; Austria sixth with 264; Canada seventh with 160; Holland, eighth with 149; Sweden ninth with 104; Belgium tenth with 76; and Denmark eleventh with 65. The other countries cannot be arranged because of lack of statistics.

To carry these comparisons still farther, Table IX was constructed. It contains the number of employees directly affected by strikes³ in foreign countries. In comparing these, from the standpoint of growth, the same general result is reached as in the case of the simple number of strikes. England shows a decrease, but there is an increase in all the other important industrial countries of Europe. Italy especially, owing largely to the growth of the unique agricultural strike, shows a remarkable increase.⁴

This basis of the number of strikers, instead of the number of strikes, changes the relative position of the different nations

¹Johnson's Universal Encyclopedia ("Strikes"); Webb: History of Trade Unionism; Thornton on Labor.

²The year 1900 would place Italy 5th, instead of 2nd.

³In some cases, simply the number of strikers.

⁴There are some agricultural strikes in Poland.

TABLE IX.—Number of employees affected.

Year.	Great Britain.	France.	Austria.	Germany.	Denmark.	Italy.
1879						4,011†
1880						5,900†
1881						8,272†
1882						5,834†
1883						12,900†
1884						23,967†
1885						34,166†
1886						16,951†
1887						25,027†
1888						28,974†
1889	327,651*					23,322†
1890	373,650*	118,941†	11,025a			38,402†
1891	258,718*	108,944†	14,123a			34,733†
1892	352,243*	48,538†	28,120a			30,800†
1893	627,969*	170,123†	74,623	3,022†		32,109†
1894	324,245*	54,576†	36,254	9,356†		27,595†
1895	263,758*	45,801†	30,714	7,318†		19,307†
1896	198,687*	49,851†	69,607	14,032†		96,051†
1897	230,267*	68,875†	41,326	128,808†		76,570†
1898	253,907*	82,065†	45,116	63,119†	7,510b	35,705†
1899	180,217*	176,772†	60,137	60,190†	6,787b	43,194†
1900	184,773*	222,714†	112,865	99,338†	36,066b	80,858†
1901	179,546*	111,414† ^s	24,870 st	122,803†	7,098 ^o	196,540
1902	156,667*	212,704† ^t	43,825 ^o	55,262†		
1903	116,901†	123,151† ^r		53,912†	3,785b	
1904				85,603† ^p		

Year.	Sweden.	Belgium.	Holland.	Bavaria.	Agric. strikes in Italy.
1879					100
1880					2,200
1881					262
1882					245
1883					8,857
1884					3,846
1885					2,275
1886	1,185†				1,366
1887	3,00†				1,087
1888	2,200†				1,950
1889	2,379†			5,275†	7,795
1890	3,900†			2,498†	3,504
1891	2,317†			995†	12,390
1892	1,346†			819†	4,748
1893	2,269†			130†	1,765
1894	768†			625†	100
1895	2,326†			3,580†	24,135
1896	4,600†	23,204 ¹⁰		4,256†	8,495
1897	5,930†	35,958		1,804†	1,895
1898	16,700†	13,101		5,887†	12,517
1899	8,667†	57,931			222,985
1900	10,290†	32,443			
1901		14,000 ⁹	4,182 ¹¹		
1902			12,652 ¹²		
1903		10,359	33,140 ¹³		
1904			7,300 ¹³		

*Strikes and lockouts.

†Strikers only.

a Not miners and strikers only.

b Strikes and lockouts, and employees immediately affected, only.

¹N. Y. Bul. of Labor, No. 22 (1904), p. 326.²U. S. Bulletin, No. 81 (1903), p. 377.³ib. No. 8 (1903), p. 1088.⁴ib., No. 52, p. 666.⁵ib., p. 658.⁶Mass. Bulletins 21, p. 36 (strikes only and strikers only).⁷Labor Gazette, Canada, Dec., '44.⁸U. S. Bulletin, No. 56, p. 261.⁹ib., p. 272.¹⁰N. Y. Bul. Labor, No. 18 (1903), p. 344. For 1896-1900, strikers only.¹¹Mass. Bul. No. 25, p. 55 (strikers only).¹²U. S. Bul. No. 56.¹³First half of year only—and figures only approximate.

somewhat. The United States stands first, Italy¹ second, France third, England fourth, Germany fifth, Austria sixth, Belgium² seventh, Sweden eighth, Denmark ninth and Holland tenth.³

These statistics tend to show how incorrect it is to think only of the United States and England, as is often done, in connection with strikes. The strike movement either is assuming or has already assumed large proportions in practically every important industrial country, and England is but fourth or fifth upon the list as a country of strikes. The increase shown at such length in the case of the United States is quite general outside of England. On the other hand, in many of these European countries, excluding Italy and Germany, the strike is a new institution, having reached large dimensions in a comparatively short time and may be but a temporary, sporadic movement,—while in the United States, the increase has already covered a long period and shows all indications of being permanent.⁴

Whatever it may all mean,—contrary to what has been so often stated, strikes in the United States are increasing both absolutely and relatively.

¹Italy is 6th instead of 2nd in the year 1900.

²The political strikes of Belgium are not included in this. The labor department does not consider these as strikes and consequently they are not recorded as such.

³No such figures for Canada.

⁴This must be regarded as tentative.

CHAPTER III.

THE DEVELOPMENT OF THE CAUSES OF STRIKES.

(a) The United States.

As has already been shown, the difficulty with the statistics of the "causes" of strikes is that they have not been viewed from the standpoint of growth. They have been tabulated so as to present an average for twenty years,¹ and that is not only comparatively valueless but even misleading. Based on the average of the entire period for which accurate statistics are given, it is concluded that almost three-fourths of the total number of strikes are due to matters directly concerning wages or hours of labor, and that other causes are so unimportant that they need hardly be considered.² If, however, those same statistics are tabulated so as to show the relative importance of the various causes from year to year, it will appear that the high average in the case of wages and hours is due largely to the beginning of the period. The statistics will show that to-day the relative importance of the various "causes" of strikes is very different than is indicated by the averages upon which conclusions have generally been based.

First, consider briefly the early history relative to the cause of strikes.³ In this early period it can be truly said that the great majority of strikes were connected with matters concerning wages and hours of labor. Of the total number reported, 79% were due to wages and the great majority of the remainder to hours. The fragmentary character of the statistics does not permit a determination of whether certain causes have increased or decreased in importance. Yet, it is quite certain that strikes

¹16th Annual Report of the Department of Labor; U. S. Industrial Commission Rept., Vol. 17, etc.

²Gilman, *Methods of Industrial Peace*; C. D. Wright, *N. Am. Rev.*, Vol. 174.

³16th Annual Rept. U. S. Dept. of Labor; U. S. Dept. Labor. Rept. (strikes and lockouts) 1887; U. S. Bulletin of Labor, Vol. 56; Freeman: *Eng. Mag.* 6:176.

other than those concerning wages and hours were extremely rare. It is to be noticed, however, that most of the recent causes of strikes appeared occasionally even during this period. As early as 1821 a strike occurred against non-union men,—the printers' union of Albany striking against a "rat." Strikes against non-union men are recorded also for 1859, '66, '68, '72 and '79. A purely sympathetic strike occurred as early as 1805; a strike for union rules as early as 1833; concerning the apprenticeship question in 1859; reinstatement in 1827; machinery in 1868; and toward the end of this early period strikes appeared more frequently for the recognition of unionism, limitation of the amount of work, and union scales; and against machinery, discharge of union men and the adoption of piece-work. Contrary to what is true of the later period, strikes in the early period, other than those due to wages and hours, need hardly be considered.

It is for the period, 1881 to 1903, however, that statistics permit the tracing of an evolution or growth of the "causes" of strikes. The statistics for the years 1881 to 1900 were collected by the U. S. Department of Labor for the entire country; those for the years 1901 to 1903 are taken from the state labor reports of as many states as were available.¹ The method pursued is briefly as follows: A very large proportion of the strikes are for two or more causes and the statistics are given in this form; i. e., not according to the number of causes, but according to the number of establishments affected by strikes due to certain causes or combinations of causes. Now, to determine the rank of each important cause, they were all taken separately in the tabulation. In this way the total number of establishments affected by strikes, involving each separate cause, was determined for each year. Then, by dividing the number for each particular cause by the total number for the same year, the per cent of establishments affected by strikes due to each of the important individual causes was secured. This per cent signifies the relative importance of one cause as compared with all the other causes; or, as the Industrial Commission says:² "It is a

¹ New York, Massachusetts, Connecticut, Rhode Island, Montana, Missouri, Michigan, Maryland.

² Ind. Com., Vol. 17, p. 653; method substantially the same.

proportion which gives correctly the relative importance of the respective classes of causes.”

After securing these per cents for every year from 1881 to 1903, for all the important causes, they were constructed into the “smoothed” curves of Chart IX. These curves graphically illustrate the relative importance of the various causes of strikes, from the *standpoint of growth*. Curve (a—b)¹ shows the percentage of strikes connected directly with the question of *wages*. It shows that, while wages still are the most important cause of strikes, the curve is rapidly declining,—having declined from more than 70% in 1882 to 41% in 1903. The average for the entire period (1881–1900) is, according to the Industrial Commission, 53.5%² which shows clearly how fallacious it is to base a conclusion upon such an average. That high general average is due largely to the very high average at the beginning of the period and indicates neither the decreasing importance of wages as a direct cause of strikes, nor the present state of affairs.

Curve (c—d)³ is the curve for the hours of labor. In the aggregate it remains about stationary. Curve (e—f) is the curve for the wages and hours combined and shows a decline from almost 83% to 61%, thus showing how fallacious is the statement that three-fourths of the strikes are due to wages and hours. For the period as a unit that statement is approximately correct, but it shows nothing of the declining importance of these causes, nor of their present position.

It is these curves, wages and hours, that are very generally recognized as the standard causes of strikes. It is not intimated that all strikes involving the questions of wages and hours are legitimate, and that all others are illegitimate; it is merely stated that generally wages and hours are pronounced as the standard causes and that the majority of the other causes are at least more questionable.⁴

¹Everything that is in any way connected with wages.

²Ind. Com. Vol. 17, p. 653.

³Decrease and against increase of hours.

⁴Some of the men who say that wages and hours are the standard causes as compared with other causes are. Prof. Wyckoff, Princeton University; Prof. F. W. Rawles, Indiana University; Prof. Bogart, Oberlin College; Prof. A. P. Winton, Washington University; Prof. J. B. Clark, Columbia University; Prof. W. G. Sumner, Yale University; Prof. Glasson, Trinity University; Prof. W. C. Ripley, Harvard University; Prof. G. G. Wilson, Brown University; Wm Prahier, National Civic Federation.

Chart IX.
Causes of Strikes In The United States.

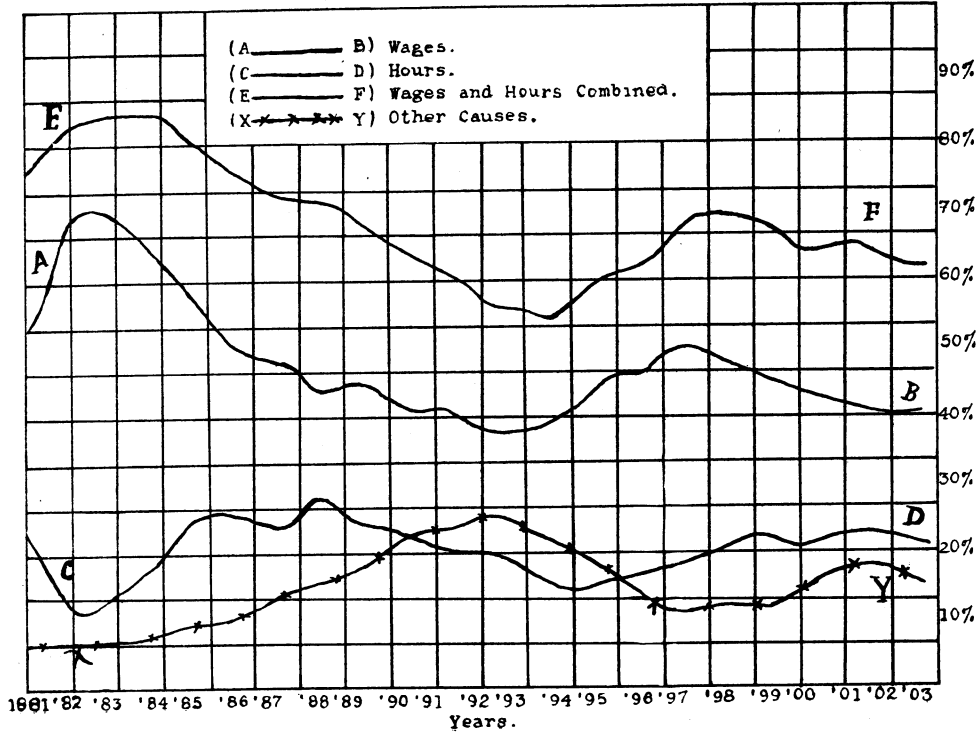


Chart IX (Continued).

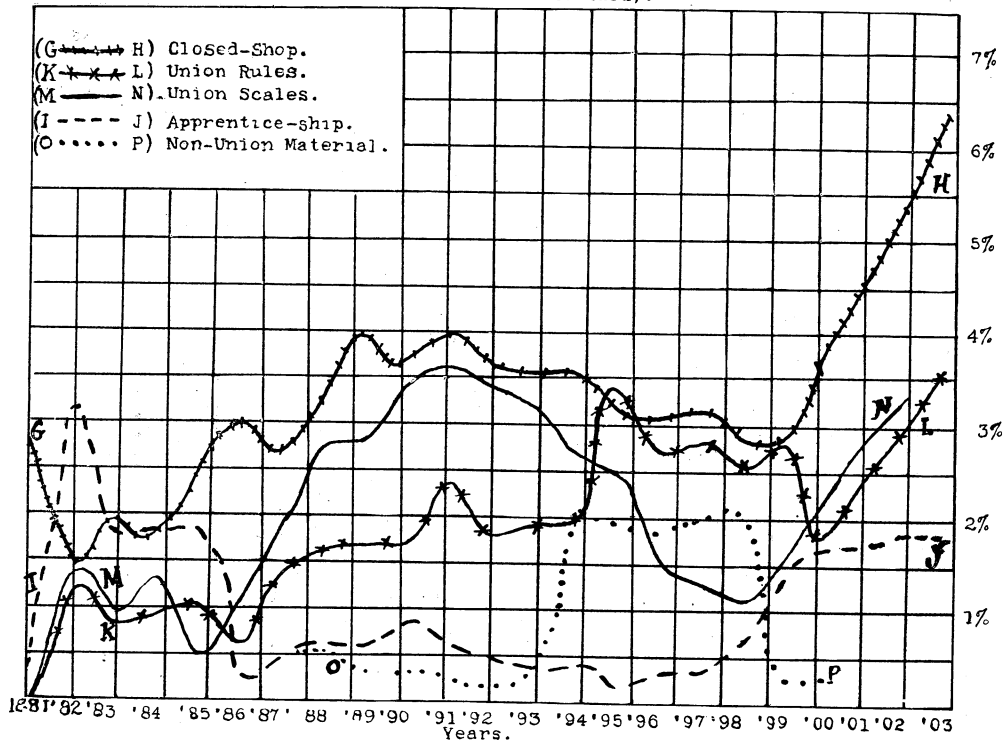
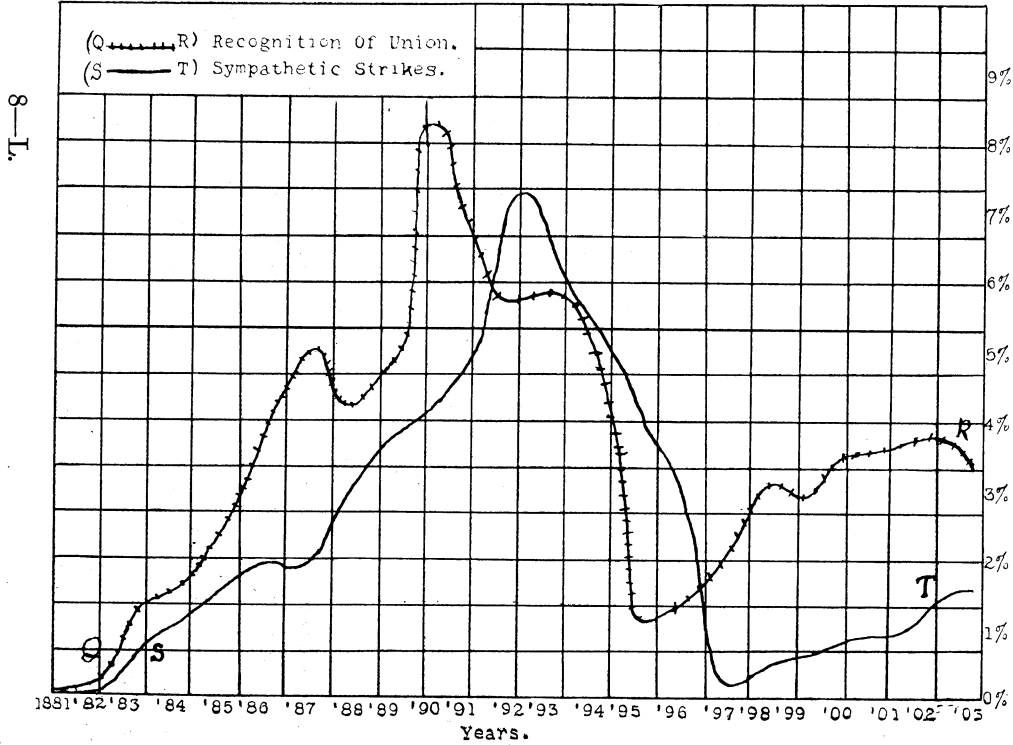


Chart IX. (Continued).



Now, it was previously shown that strikes are increasing in the United States.¹ These curves show that the increase is not due to an increase in the number of strikes concerning wages and hours, the standard causes. The increase consequently is due to other strikes than those directly connected with wages and hours.

The remaining curves of the chart show the growing importance of these other causes. Sympathetic strikes are the only important exception to the general rule. As curve (s—t) indicates, it is decreasing in importance, falling almost to zero in 1893. This is very probably due to the fact that, at about this time, the courts began to consider the sympathetic strike illegal. The causes which are increasing in importance, according to the chart, are the "closed shop," union rules, union scales, recognition of unionism, apprenticeship restriction, against non-union material, and some of those included in the general curve (x—y). The "closed shop," especially, is becoming of great importance as a cause of strikes. Although there are minor causes, not of the nature of those above mentioned, yet on the whole these curves indicate a gradual movement away from the purely standard causes, wages and hours, in the direction of more questionable causes. (Figures in Table X.)

It is often stated that many of the strikes for the closed shop are virtually strikes concerning wages. This, undoubtedly, is true in some instances, but one may well say: first, the strikes for the closed shop which have wages in the background are very probably a minority of the total. Second, granting that many of these strikes are virtually to maintain wages, so many other elements enter into the closed shop question that even then they must be placed in a class distinctly outside of that held by standard strikes directly involving wages and hours. Third, it must be remembered that all strikes involving wages and hours are not legitimate. One may well ask whether the number of illegitimate strikes included in the curves of wages and hours are not more than sufficient to counterbalance the number of legitimate strikes included in the "closed shop" curve.

¹Chapter II.

TABLE X.—Causes of strikes in the United States.

YEAR.	WAGES.		HOURS.		CLOSED SHOP.		UNION RULES.		RECOGNITION OF UNION.	
	Ab.	Sm.	Ab.	Sm.	Ab.	Sm.	Ab.	Sm.	Ab.	Sm.
	Pr. ct	Pr. ct	Pr. ct	Pr. ct	Pr. ct	Pr. ct	Pr. ct	Pr. ct	Pr. ct	Pr. ct
1881.....	52.5	52.5	23.4	23.4	2.8	2.8	.13	.13	0.0	0.0
1882.....	87.	70.3	2.8	11.9	.7	1.5	.14	1.25	.6	.2
1883.....	71.5	69.6	9.5	14.2	.1	.2	3.5	.85	.0	1.2
1884.....	63.3	66.1	15.3	17.4	4.1	1.7	.19	.92	.32	1.4
1885.....	73.	57.8	10.2	25.3	1.7	2.6	.31	1.12	5.1	2.3
1886.....	35.9	51.5	46.	25.7	1.2	3.	.48	.66	9.9	3.8
1887.....	44.4	48.8	25.7	24.3	5.2	2.7	1.16	1.41	5.1	5.
1888.....	41.2	43.7	21.3	27.9	2.9	3.3	1.2	1.6	7.8	4.2
1889.....	49.5	44.9	18.3	23.6	2.9	3.9	3.9	1.7	6.3	5.1
1890.....	47.6	42.3	28.4	22.6	4.3	3.6	1.4	1.7	1.	8.2
1891.....	42.	42.3	24.4	20.5	4.2	3.9	.9	2.42	5.1	6.9
1892.....	31.3	38.	20.7	20.	3.8	3.6	1.2	1.83	20.8	5.7
1893.....	41.3	38.	11.1	18.	4.3	3.6	4.7	1.99	1.2	5.8
1894.....	28.	39.8	15.8	15.3	1.5	3.6	.96	1.95	24	5.1
1895.....	47.7	45.1	18.2	15.4	4.4	3.2	2.2	3.39	1.6	1.4
1896.....	51.	46.	10.9	16.3	4.2	3.1	.72	2.75	1.6	1.6
1897.....	57.5	50.5	21.	17.7	1.8	3.2	8.4	2.84	2.4	1.98
1898.....	46.	46.	15.9	20.7	3.7	2.8	1.3	2.55	2.2	3.1
1899.....	50.6	45.	22.8	21.5	2.0	2.8	1.6	2.8	7.1	2.9
1900.....	35.9	42.9	23.	20.9	2.6	3.8	7.3	1.7	7.1	3.4
1901.....	41.	41.9	25.	22.5	4.	4.5	2.	2.4	1.	3.5
1902.....	41.	59.8	18.	22.1	7.	5.4	3.	2.9	5.	3.8
1903.....	41.	41.	24.	21.8	7.	6.4	5.	3.6	2.3	3.1

YEAR.	SYMPATHY STRIKE.		UNION SCALE.		APPRENTICE-SHIP.		NON-UNION MATERIAL.	
	Ab.	Sm.	Ab.	Sm.	Ab.	Sm.	Ab.	Sm.
	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.
1881.....	.07	.07	.13	.13	.26	.26	.....	.....
1882.....	.06	.07	3.7	1.4	.32	3.1	.....	.....
1883.....	.06	.7	.4	.98	8.8	1.9	.....	.....
1884.....	2.3	1.	.12	1.3	.19	1.9	.....	.....
1885.....	1.3	.5	.55	.5	.19	1.9	.....	.....
1886.....	1.4	2.	.38	1.	.33	.34	.....	.....
1887.....	2.9	1.9	1.08	1.76	.26	.46	.6	.6
1888.....	2.3	3.	2.9	2.87	.77	.66	.8	.6
1889.....	1.89	3.7	3.9	2.87	.75	.68	.4	.4
1890.....	6.7	4.2	1.9	3.4	1.2	.81	.13	.4
1891.....	6.9	4.8	1.6	3.6	.43	.74	.12	.3
1892.....	4.6	7.6	4.9	3.4	.94	.61	.6	.2
1893.....	5.2	6.2	5.9	3.26	.39	.38	.07	.2
1894.....	15.6	5.3	2.1	3.76	.09	.34	.03	2.
1895.....	.05	4.2	1.8	2.48	.06	.15	.09	1.9
1896.....	.2	3.2	2.1	1.6	.19	.29	1.4	1.9
1897.....	.13	.2	.54	1.3	.03	.33	.06	.2
1898.....	.29	.4	1.6	1.14	.96	.53	.1	2.1
1899.....	.27	.6	.88	1.5	.36	1.49	.41	.23
1900.....	.99	1.2	.61	2.2	1.1	1.69	.25	.28
1901.....	1.3	1.3	4.	2.7	5.	1.68	.....	.....
1902.....	3.	1.7	4.	3.3	1.	1.8	.....	.....
1903.....	1.	1.9	.....	.....	1.	1.8	.....	.....

16th Annual Report U. S. Dept. of Labor.

Ab—Absolute.

Sm—Smoothed by five year average.]

The vital and certain point, however, is that there is a gradual shifting, consisting of a decreasing per cent of strikes directly connected with wages and hours, and an increasing per cent involving matters pertaining to trade unionism. The common statement that demands involving wages and hours are the cause of three-fourths of the strikes is not true to-day; and the statement that they are still the most frequent cause of strikes is true, but their relative importance is decreasing. The decrease is so rapid, that if the average rate of decrease is considered, the fifty per cent mark will be reached in less than four years. It may in fact be questioned whether or not it has not already been reached, as it is certainly true that the great majority of the large strikes of 1904 did not directly involve either wages or hours.

It may be well, here, to briefly indicate the effect which this shifting of causes has upon the success and failure of strikes. In as much as the statistics¹ of causes are not given on the basis of the number of causes for each year, it is practically impossible to trace the per cent of success and failures from year to year. The majority of the strikes are due to more than one cause and this is more true of the end of the period than of the beginning,—so that a change in the per cent of success and failure from year to year on the basis of these statistics after they are tabulated by separate causes would not result in a reliable conclusion. The only safe thing to do is to accept the *average* per cents given by the Labor Commissioner for *groups of causes* for the aggregate period of twenty years. They are given in Table XI.

¹16th Ann. Rept., U. S. Dept. of Labor.

TABLE XI.—*Success of strikes on the basis of causes.*

Causes.	Successful or partly suc- cessful.	Unsuccessful.
	Per cent	Per cent.
Wages	70.15	29.85
Increase of wages and reduction of hours.....	83.57	16.43
Hours reduced.....	58.09	41.91
Against reduction of wages.....	45.68	54.32
New scales.....	65.43	34.57
Hours reduced, etc.....	32.47	67.53
Hours reduced, etc.....	100.	0.
Increased wages, etc.....	100.	0.
Against reduction of wages, etc.....	100.	0.
Increased wages, etc.....	92.69	7.31
Closed shop.....	68.59	31.41
Sympathetic strike.....	27.36	72.64
Recognition of union.....	12.37	87.63
Recognition of union, etc.....	30.87	68.13
Union rules.....	46.66	53.34
Union rules and scales.....	69.43	30.57
Non-union material.....	0.	100.

Wages
and
hours.Other
causes.

16th Annual Report of U. S. Commissioner of Labor.

While these figures do not necessarily indicate the present state of success and failure "by causes," there is every reason to believe that they show approximately the relative positions of the various causes. It appears that in the aggregate, strikes directly connected with wages and hours are more successful than strikes not due to such standard causes.¹ It is also to be noted that the per cent in the case of a combination of either wages or hours with some other cause is generally lower than the per cent in the case of either wages or hours alone, or wages and hours combined. Yet statistics² show that the per cent of success for all strikes in the aggregate is not decreasing. Evidently, then, the increasing success in strikes involving wages and hours is great enough to counterbalance the decreasing success which must accompany those strikes which involve more questionable demands.

It is evident that these statistics of the causes of strikes may have important significance relative to many complex labor problems. It is not here proposed to argue just what significance they have, as that would require a determination of the legitimacy or illegitimacy of each individual cause.³ Whenever

¹Blackmar in his Economics points this out.²16th Annual Report of U. S. Dept. of Labor.³Which the writer is wholly incapable of doing.

that becomes necessary it is merely to indicate what they may signify.

(1) By indicating which causes are increasing in importance and which are decreasing, they show definitely of what the increase, previously shown, consists. Thus, if once the justice or evil of each important cause is determined, these statistics will mathematically demonstrate whether the increase of strikes is dangerous or justifiable.

(2) These statistics of "causes" throw light upon the question as to whether strikes are or are not a "paying institution." It is self evident that there is a wide difference between a strike for legitimate causes and one for illegitimate causes. Inasmuch as in the aggregate the majority of strikes have involved causes generally recognized as justifiable (wages and hours), one may say with some certainty that on the whole strikes have "paid." But these statistics show also, that these causes are decreasing in importance. The final answer must depend, therefore, upon the legitimacy of those causes which are increasing in importance.¹ If they are not generally justifiable the answer is that, while strikes have in the aggregate "paid," the degree to which this is true is rapidly declining.

(3) These statistics furnish a fair index of the policies upheld by trade unionism. "Causes" signify demands or policies for which the strikers stand. If the unions strike more and more for the closed shop and similar demands, as the figures show, and less and less for other demands, it is safe to say that they are laying increasing stress upon those demands for which they strike most frequently. Once determine, therefore, whether the closed shop, etc., are legitimate, and these statistics graphically demonstrate whether trade unionism is pursuing a good or bad course of development.

(4) Finally, these statistics may have an important significance relative to voluntary methods of settling strikes. The success of voluntary methods is closely connected with the "cause" of the strike. It is evident from the very nature of the subject, that strikes involving the closed shop and similar

¹Statistics of the success and failure of strikes according to causes, also enter here. See page 55.

demands are more difficult to arbitrate than strikes for the improvement of wages and hours.¹ In the case of the closed shop there is no opportunity for compromise,—the shop being either open or closed. State Boards of Arbitration testify that they meet with almost uniform failure in the case of strikes due to causes other than wages, hours or physical conditions of labor. The apparent increase in the success of arbitration boards² is but superficial, as that increase is almost entirely in the case of strikes involving wages and hours. The statistics of causes of strikes show, therefore, that voluntary arbitration can probably never solve the labor problem as long as the development of strikes pursues its present course.

The case for conciliation is similar. The hostile parties come together much more readily when the trouble concerns a matter of wages or hours than when a matter such as the closed shop is involved. There is abundant testimony to show that many employers concede the right of labor to have a voice in the case of wages and hours but absolutely refuse to permit the enforcement of a closed shop, dictation of union rules, or similar demands.³

Trade agreement, too, is affected by the "cause" of strikes. In the majority of closed shop agreements the element of duress² is present. Not only is such an agreement illegal,⁴ according to the latest decision, but it is evident that an agreement based upon duress will not stand as firmly as one entered into willingly. It is reasonable to believe that the joint agreements would advance much more rapidly if laborers' demands were other than these statistics show them to be.

Whether the demands of employees are just or unjust, the statistics show, undoubtedly, that the problem of voluntary settlement of strikes is becoming more difficult.

¹Secretary of Mich. State Board of Arbitration (letter). Ill. State Board of Arbitration in "Employers and Employees." Col. State Brd. of Arbitration (letter).

²Reports of State Boards of Arbitration and Mediation.

³Letters from employers (Hesperian Joint Debate Team of 1904, Univ. of Wis.).

⁴U. S. Industrial Commission, Vol. 17. Cases declaring closed shop agreements illegal: Kellogg Switchboard Case, Judge Adams, Ill., 1904; Edwards v. Boston, 32 Am. L. Rev., 624, 1904; Judge Ludwig's Case, Milwaukee, 1904; Judge Cooley's Case (N. Y. Sup. Ct.), 1904.

(b) Foreign Countries.

As in the case of the simple increase or decrease of strikes, it may be of interest to briefly examine the causes of strikes in foreign countries. In few instances do the statistics cover a sufficient length of time to make possible an absolutely certain determination of an evolution. They show, however, what the present position of the various causes is, and when combined with historical facts of the period preceding the accurate statistics, permit at least a fairly accurate determination of the general movement.

The very early experience of England¹ as to "causes" indicates that demands relative to wages were then pre-eminent and that those involving the general conditions within the shop comprised the majority of the remaining causes. There were also some early strikes in defense of trade unionism, but the hostile legislation condemning combinations made them comparatively rare.

TABLE XII.—*Causes in Great Britain.*

Cause.	1889	'90.	'91.	'92.	'93	'94	'95.	'96.	'97.	'98.	'99	1900	'01.	'02	'03.
	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
Wages	74	61	53	54	61	49	47	53	61	63	64	67	63	60	60
Hours	2	2	3	2	1	2	1	2	2	3	2	1	5	5	4
Bt. classes of workers..	2	2	3	2	6	3	3	5	5	4	3	5	3	1	3
For or against employes	3	3	4	5	4	5	5	5	1	1	1	1	1	1	1
For or against certain officials	1	1	2	2	2	3	2	1	1	1	2	1	1	1	1
Shop rules	16	16	21	19	15	19	21	15	14	13	9	9	12	14	14
Trade unionism	3	8	8	6	9	6	8	10	6	7	6	7	5	9	6
Sympathetic	2	2	1	2	1	1	1	2	2	1	3	1	1	1	2
Apprenticeship	1	1	1	2	1	2	3	1	2	2	1	1	1	1	1
Woman labor	1	1	1	2	1	2	3	2	2	1	1	1	1	1	1
Child labor	1	1	1	2	1	2	3	1	1	1	1	1	1	1	1
Unskilled labor	1	1	2	1	1	2	3	1	1	1	1	1	1	1	2
Reinstatement	1	1	1	1	1	1	1	5	5	6	6	7	5	6	6

Sources the same as those given in the tables for the number of strikes and the number of employes affected by strikes. See Tables VIII and IX. The above per cents are secured in the same way as those for the United States were computed. It is not by dividing the number of strikes due to a certain cause and combination of causes by the total number of strikes; but the statistics were divided into separate causes and each separate cause divided by the total number of causes. Thus, the per cents may not be exactly as those which are sometimes presented.

Table XII covers the period of accurate statistics. A careful examination of the Table will show that it indicates no such development as appears in the United States. Strikes directly connected with wages are easily the most important; next comes

¹Webb: History Trade Unionism; Royal Commission of Labor, 1894; Howell: Trade Unionism Old and New; Howell: Labor, etc.; Drage: The Labor Problem, etc., etc.

those relative to shop rules; and third, trade unionism, which corresponds fairly well with the American term "recognition of unions." All of them remain about stationary during this later period. A glance at the figures show, also, that there is no appreciable change in any of the remaining causes.

A comparison with the United States reveals many differences and few similarities. The obvious similarities are that in both wages constitute and always have constituted the chief cause. In both there are also a large variety of minor causes such as the sympathetic strike, strike against apprentices, etc. The noticeable differences are (1) the per cent of strikes due to wages in England is considerably higher than in the United States. (2) Hours of labor are a very unimportant cause in England, while in the United States they are very important. (3) The per cent of strikes demanding the recognition of union¹ is higher in England. (4) The closed shop, as a cause,—so pronounced in the United States,—is comparatively rare in England.² (5) The shifting from one set of causes to another of a different character, so characteristic of the United States, is lacking in England.

The very early history of *French strikes* shows that wages were then in the great majority and that occasionally strikes occurred relative to "general conditons," discharge of officials, sympathetic strikes, "against poor raw material," for improved hours.³ The later period is described in Table XIII. From these statistics it appears that wages are still in the majority and that demands for shorter hours and against the discharge of employees have become fairly important as causes. The remaining causes are all unimportant and outside of demands concerning the rules of the workshop none of them are increasing in frequency. Strikes concerning trade unionism are noticeably absent, because of the comparative unimportance of labor organization in France. Within the period covered by the Table the per cent of strikes due to wage demands is much like

¹The term "trade unionism" used in the English statistics, is not identical with the American term "recognition of union."

²There are some strikes in England for the closed shop included in the statistics under the term "between classes or workers" and "for or against employees," but they are unimportant.

³English Royal Commission of Labor, 1894, Vol. 6.

that of England except in the last two years¹ when it is considerably higher. The per cent relative to hours is much greater than in England but much less than in the United States. Finally, as in England, there is no general shifting from one set of causes to another during the period indicated by the statistics.

TABLE XIII.—*Causes in France.*

Cause.	1890	'91.	'92.	'93	'94	'95.	'96.	'97.	'98.	'99.	1900	'01.	'02.	'03.
	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
Wages	63	60	63	59	60	56	56	60	58	62	60	...	76	72
Hours	15	8	7	14	8	10	7	6	6	10	8	...	7	10
Union rules	1	4	2	...	...	...	...	...	...	...	...	...	...	...
General conditions .....	...	...	...	6	7	6	4	7	7	5	2	...	7	9
Recognition of union	1	4	2	...	...	...	...	...	...	...	...	...	...	...
Against discharge	6	6	7	6	...	6	6	7	6	6	7	...	8	14
For discharge	6	8	11	7	12	12	10	10	8	9	9	...	7	12
Fines	3	3	3	...	6	...	4	2	3	2	3	...	3	3
Apprentices .....	...	...	...	4	4	4	2	1	1	1	1	...	1	3
Shop rules	1	1	2	2	2	4	4	3	6	4	3	...	4	6
Piece work .....	...	...	...	2	2	2	3	2	3	2	2	...	3	4
Sympathetic strike .....	...	...	...	1	2	...	...	...	...	...	...	...	...	...
Reinstatement .....	...	...	...	...	...	...	...	...	...	...	...	...	8	...

See explanation of Table XII.

In *Austria*, too, the early period is practically a history of strikes concerning wages,² with hours appearing as a cause slightly later and with some strikes concerning "contract conditions" and similar matters. Accurate statistics are available only from 1894 to 1902. They show that during this later period, practically all the causes remain of about stationary importance. The comparative absence of trade unions in *Austria* accounts for the absence of that element as one of the causes. The remainder of the Table is self-explanatory (Table XIV).

¹Too much stress must not be placed upon these last two years, as a slight difference in the computation of these later years was necessitated, and this may account for the differences.

²Eng. Royal Com. Labor, Vol. 9.

TABLE XIV.—*Causes in Austria.*

Cause.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.
	Prct.	Prct.	Prct.	Prct.	Prct.	Prct.	Prct.	Prct.	Prct.
Wages	34.2	23.3	28.8	27.8	31.5	27.8	27.0	48.2	51.7
Hours	13.5	11.2	.6	10.8	12.5	14.8	13.2	14.6	16.0
Discharge of employes.....	5.0	7.4	6.9	6.6	6.0	4.7	4.4	8.9	2.7
Against discharge	7.2	7.1	6.2	4.7	4.4	7.3	7.2	1.1	11.4
Reinstatement.....	8.8	7.4	5.7	5.3	6.0	5.2	3.6	.....	.....
Shop rules .....	.3	10.0	7.8	9.8	9.2	9.7	7.6	4.7	7.7
Work on holidays	7.5	2.9	3.3	4.9	1.9	4.6	5.0	.....	.....
General conditions.....	4.2	1.8	1.7	1.7	1.4	2.5	1.4	.....	.....
Recognition of com.....	1.3	2.1	2.1	2.1	2.3	2.0	3.8	.....	.....
Piece work	2.6	2.8	3.1	3.1	3.3	1.5	1.7	.....	.....
Apprentices.....	1.1	.7	.5	.5	.8	.5	.9	.....	.....
Bad treatment.....	1.1	.3	.3	2.5	1.5	.6	1.0	1.2	1.6

See explanation of Table XII.

The statistics of Italy go back to 1879, but they do not classify the causes minutely. Table XV represents these statistics in the percentage form and is also self-explanatory. "Wages" as a cause have about the same relative position as they have in England and France. The per cent for hours is similar to France, but less than in Austria and very much less than in the United States. The "other" causes, at least during the earlier period, concerned chiefly the sympathetic strike, the "inferior quality of the first material given out to workmen, special technical conditions of manufacturers, internal regulations of the workshop, to obtain the dismissal of outside hands, ill feeling against the managers and foremen of factories, imposition of fines, opposition to special taxes and quarrels with municipal authorities."¹ A glance at the Table shows that there is, in the aggregate, no general change in the character of strike causes in Italy.

TABLE XV. *Causes in Italy.*
Per cent. of strikes due to important causes

Cause.	1879 to '91.	'92.	'93.	'94.	'95.	'95.	'97.	'98.	'99.	'00.	'01.
Wages	64	54	60	56	53	65	61	61	54	55	66
Hours	9	7	10	14	7	4	8	7	8	10	7
Others	27	39	30	30	40	31	31	32	38	35	27

See explanation of Table XII.

The causes of strikes in *Germany* have passed through three quite distinct stages of development. From 1847 to 1868 "a

¹Signor Bodio: *Statistica Delgi Scioperi*, 1892.

large proportion of strikes were connected with the desire to assert the right of combination, as yet unrecognized by the majority of German governments."¹ From 1868 to 1878 the great majority were concerned with wages. Then the law of 1878, against Social Democracy, and the trade depression practically did away with strikes until 1882. At this time began the modern development which is described in Table XVI.² While changes in the development of causes have occurred, no general shift from one set of causes to another has occurred since 1868 or after the right of combination was secured.

As in most other countries, the early history of *Belgium* shows a majority of strikes were due to disputes relative to wages.³ The present position of the various causes is shown in Table XVII. Wages are still the cause of the majority of Belgium strikes; hours, as in England, form but a small per cent, while the per cent under the general term "tradeunionism" has evidently become of undue importance during the last few years.

TABLE XVI.—*Causes in Germany.*

Cause.	1899.	1900.	1901.	1902.
	Pr ct.	Pr ct.	Pr ct.	Pr ct.
Wages.....	56	46	48	52
Hours.....	17	13	10	11
Discharge (for).....	2	3	5	4
Reinstatement.....	7	7	8	8
Holiday work (against).....	.....	1	1	4
Sanitation.....	.....	2	2	1
Against use of materials from striking firms.....	.....	.4	.1	.1
Better treatment.....	.....	1	1	1
Recognizing committee.....	.....	2	3	3
Shop rules.....	.....	2	3	5

See explanation of Table XII.

Aside from this very recent increase of the per cent for trade unionism, no change is noticeable in the case of the purely industrial strikes. Since 1886, however, numerous "political" strikes have occurred, in which the workmen struck for increased political rights. The government does not, however, consider these as strikes but as political and socialistic agitations.⁴ If confined purely to industrial strikes no general change,

¹ British Royal Com., Vol. 5, Foreign Reports.

² German strike statistics go back only to 1899.

³ British Royal Com. (Foreign Reports), Vol. 4.

⁴ These political strikes are not included in the statistics.

as in the United States, is perceivable. The increasing per cent in the case of trade unionism is not at the expense of the primary causes,—wages, hours, and general conditions, but at the expense of minor causes.

TABLE XVII.—*Causes in Belgium.*

Cause.	1896.	1897.	1898.	1899.	1900.	1901.	1902.	1903.
	Prct.	Prct.	Prct.	Prct.	Prct.	Prct.	Prct.	Prct.
Wages	58	53	56	62	63	.....	.....	51
Hours	3	3	1	2	3	.....	.....	7
General conditions	11	9	4	10	10	.....	.....	7
Piece work	2	2	.....	1	.....	.....	.....	.....
Woman labor	1	.....	.....	1	1	.....	.....	.....
Shop rules	1	8	4	1	1	.....	.....	8
Fines	1	2	1	1	1	.....	.....	8
Discharge (for)	10	6	11	11	3	.....	.....	.....
Reinstatement	12	13	18	8	9	.....	.....	.....
Trade unionism .....	.....	.....	2	3	5	.....	.....	20

See explanation of Table XII.

The early strikes of *Holland* were concerned chiefly with wages.¹ Immediately in connection with this came the question of machinery inasmuch as the introduction of machinery tended to reduce wages. Other strikes concerned the payment of wages in German money, the bonus system, the truck system and hours of labor. "The question of hours has hitherto played a subordinate part in labor difficulties in Holland and consequently few strikes have arisen from this cause." The present position of the causes in Holland is evident from Table XVIII. There is evidently a close resemblance between the causes of Holland and those of Belgium.

TABLE XVIII.—*Causes in Holland.*

Per cent. of Strikes due to Important Causes.

Cause.	1901.	1902.	1903.
	Wages	73	55	49
Hours	3	6	9
Trade unionism	4	1	5
Reinstatement	13	14	16
Rules	1	1	6

See explanation of Table XII.

¹British Royal Com. (Foreign Reports), Vol. 9.

The early strikes in Denmark, as in Germany, were largely to enforce the recognition of unionism. Then wages became the foremost cause. The present condition is shown in Table XIX. It is generally the same as in the case of Holland and Belgium.

TABLE XIX. — *Causes in Denmark.*
Per cent. of Strikes due to Important Causes.

Cause.	1897.	1898.	1899.
Wages.....	56	78	66
Hours.....	.....	2	1
Shop rules.....	14	7	9
Personal disputes.....	6	4	8
Trade unionism.....	4	2	3

See explanation of Table XII.

In all these countries,¹ except Germany and Belgium, where the first strikes were chiefly concerned with the demand to secure the right to strike, the early strikes were practically all concerned with wage disputes. On the other hand, the statistics for *recent* years in all these countries show that wages still hold the foremost position but that other causes have also arisen. From this it would appear that, in the aggregate, the relative importance of wages as a cause has everywhere decreased. As was shown, the early strikes of the United States were also due to wage disputes in the great bulk of instances and that the per cent directly connected with wages is much below the majority (41%). In this there is, therefore, quite general agreement.

Yet it is quite a different proposition when the very early history is omitted and the comparisons are based upon that period in which the strike had reached a position *beyond the*

¹The statistics for other European countries have not been available and their relative unimportance demands no lengthy discussion.

Switzerland—Says M de Queker (*Etudes su les Questions Quvriers*, p. 146): "Strikes have arisen from two causes: either they aim at an advance, or they originate in some of the thousand and one questions concerned with the condition of labor." Hours not at first important, but becoming more so (Vol. 7, British Royal Com., Foreign Repts.). Tradeunionism during certain periods, especially 1870-1889. Union rules is a cause. Agitation of the "internationale" is behind many of the strikes under pretense of some other cause.

Hungary—Practically all wages and hours and general working conditions. (Royal Commission, Vol. 10, Foreign Reports.)

Russia—Wages, hours and general conditions, with recent strikes for political concessions to the workmen. In this respect Russia resembles Belgium. (Early history from Royal Commission, Vol. 10.)

Spain and Portugal—Very few strikes.

experimental stage,—beyond the stage of mere occasional, sporadic upshots of wage-earners and had become a recognized institution. When comparisons are then made, it appears that the development of strike causes places the United States quite alone among the important industrial nations. In almost all the foreign countries considered, the relative position of the various causes remains practically unchanged. In some instances the minor causes show tendencies to increase or decrease and in two countries trade unionism seems to have become important during the last few years;¹—but nowhere do the standard causes, wages and hours (and in most of these countries other conditions of labor must be included under the term “standard causes”) decrease in importance. The shifting away from wages and hours, toward a group of more questionable causes, so characteristic of the United States, is nowhere noticeable in Europe after the strike had passed beyond the experimental state.

¹Germany and Belgium.

CHAPTER IV.

EFFECT OF TRADEUNIONISM UPON THE STRIKE.

President Samuel Gompers says: "Language fails me to express how earnest are the organized laborers in their desire to avoid and to reduce the number of strikes."¹ On the other hand President David M. Parry in a chapter headed "Strikes are Outbursts of Mobocracy"² says: "I have only to point to the hundreds of strikes that have occurred in the last year, each one of which was conducted under the auspices of unionism and each one of which was a violent defiance of law. . . . the spirit of mob has brooded over the country during the last year as it has never brooded before, and in looking for the cause I ask you not to overlook the labor agitator, the chief ranter against law and the worst fire-brand of anarchy with which we are now afflicted."

Thus openly declare the two opponents, the Tradeunion vs. the modern Employers Association. The one claims that the effect of tradeunionism upon the strike is wholly good; the other claims that it is wholly bad.

What do the statistics of strikes indicate relative to the effect of tradeunionism upon strikes?—The first problem is to determine whether the effect is to increase or to decrease their number.

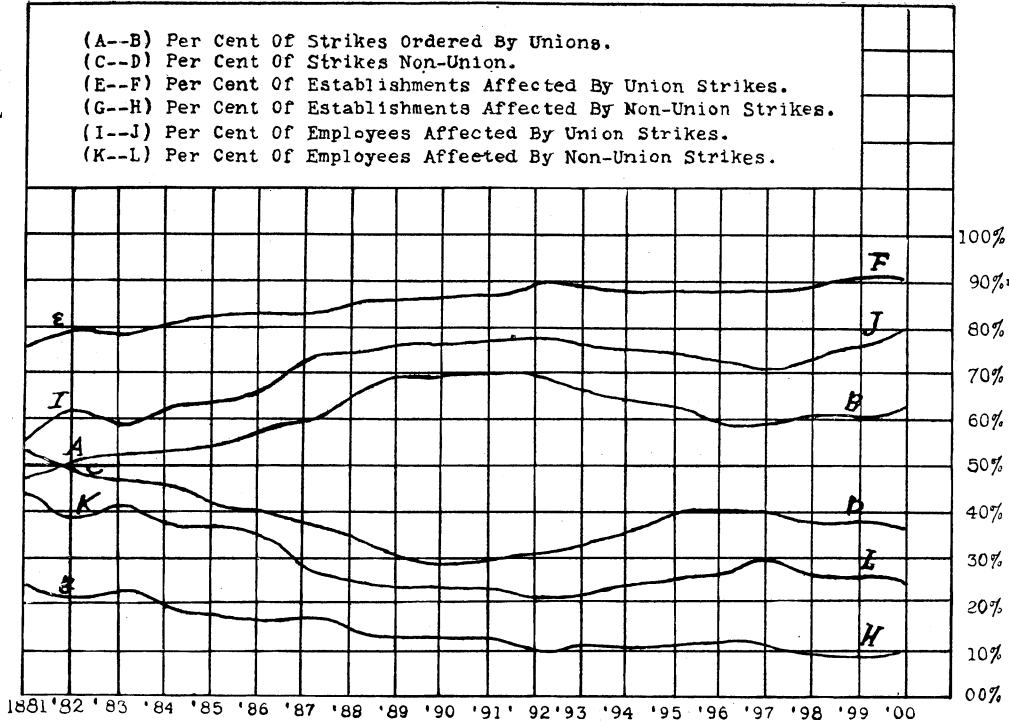
It is here essential to learn the relative frequency of union as compared with non-union strikes. On the basis of the absolute number of strikes from 1881 to 1900, 63.4% were ordered by unions; on the basis of the number of establishments affected by strikes, 88.1%; and on the basis of the number of employees affected by strikes 73%. Chart X presents the figures for each year so as to signify a movement. Curve (a—b)

¹In "Labor and Capital," by Peters, p. 62.

²"Mob Spirit in Organized Labor."

Chart X.
Per Cent Of Union And Non-Union Strikes.

9-1.



is the "smoothed" curve representing the per cent of strikes ordered by unions, and in the aggregate it shows an increase.¹ Curve (c—d) indicates a corresponding decrease in the per cent of non-union strikes. But better statistics are available. Curves (e—f) and (g—h) are respectively the per cent of establishments affected by union and non-union strikes. The union curve shows a decided increase, while the non-union curve shows a corresponding decrease. Curves (i—j) and (k—l) indicate respectively the per cent of union and non-union strikes on the basis of the number of employees affected. Again, there is an unmistakable increase in the case of the former, with a corresponding decrease in the case of the latter. (The actual per cents are given in Table XX.)

TABLE XX.—Per cent of union and non-union strikes.

YEAR.	PER CENT. OF STRIKES.				PER CENT. OF ESTABLISHMENTS AFFECTED.				PER CENT. OF EMPLOYEES AFFECTED BY STRIKES.			
	Union.		Non-union.		Union.		Non-union.		Union.		Non-union.	
	Ab.	Sm.	Ab.	Sm.	Ab.	Sm.	Ab.	Sm.	Ab.	Sm.	Ab.	Sm.
1881	47.1	47.1	52.9	52.9	76	76	24	24	55.7	55.7	44.3	44.3
1882	48.0	50.5	52	49.5	76	78.6	24	21.4	64.78	61.96	35.22	38.04
1883	56.6	52.3	43.4	47.7	84	78	16	22	65.4	58.37	34.6	41.63
1884	53.9	53.4	46.1	46.6	83	80.4	17	19.6	40.19	62.25	59.81	37.75
1885	55.9	57.1	44.1	42.9	71	82.6	29	17.4	65.8	64	34.2	36
1886	53	59.4	47	40.6	88	83.2	12	16.8	75.1	65.59	24.9	34.41
1887	66.3	62.1	53.7	37.9	87	82.6	13	17.4	73.6	72.99	26.4	27.01
1888	68.1	65.2	31.9	34.8	87	86.4	13	13.6	73.28	74.85	26.72	25.15
1889	67.3	69.5	32.7	30.5	80	87.2	20	12.8	77.18	75.33	22.82	24.67
1890	71.3	70.4	28.7	29.6	90	88	10	12	75.1	76.03	24.9	23.97
1891	74.8	70.7	25.2	29.3	92	88.2	8	11.8	77.5	76.5	22.5	23.95
1892	70.7	69.8	29.3	31.2	91	90	9	10	77.1	77.7	22.9	22.30
1893	69.4	66.3	30.6	37.7	88	89.6	12	10.4	75.6	76.46	24.4	23.54
1894	62.8	64.3	37.2	35.7	89	89.2	11	10.8	83.2	75.4	16.8	24.6
1895	54.2	61.2	45.8	38.8	88	89.4	12	10.6	68.9	74.4	31.1	25.6
1896	64.5	59.4	35.5	40.6	90	88.6	10	11.4	72.1	73.3	27.9	26.7
1897	55.2	59.2	44.8	40.8	92	89.2	8	10.8	73.5	70.9	26.5	29.1
1898	60.4	61.5	39.5	38.5	84	84.8	16	10.2	69.1	73.2	30.9	26.8
1899	62	61.3	38	38.8	90	90.1	8	9.9	70.8	75.06	29.2	26.1
1900	65.4	63.1	34.6	36.9	91	90	9	10	80.6	80.6	19.4	25.6

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Bul. U. S. Labor Department—Vol. 56.

Two contentions arise relative to these statistics. First, it is actually claimed at times that the per cent of strikes in the hands of unions is decreasing² and the per cent of non-union strikes increasing. This conclusion, as in the case of the simple

¹ Method of smoothing same as that previously described.

² Adams: Labor Problems.

increase or decrease of strikes, is due to a wrong method of statistical tabulation.¹ The second contention arises relative to the present frequency of union and non-union strikes. This is due to the usual error of accepting the average of the entire period² of statistics as indicative of the present situation. In the case of the simple number of strikes, this is accidentally about correct, but is very false in the case of the number of employees affected by strikes. The average would indicate that 88.1% of the total number of establishments affected by strikes were affected by union and 11.9% by non-union strikes; while in 1900 the actual per cents were respectively 91 and 9. On the basis of the number of employees affected by strikes the average per cents are 73.8 and 26.2 respectively, while the actual per cents of today (1900) are 80.6 and 19.4 respectively.

Now, the fact that the great proportion of strikes are instigated by unions indicates nothing of certainty as to the effect of tradeunionism upon strikes. The most superficial observation will show that much of this is due to the nature of the employment of unorganized workmen.³ As a general rule the skilled trades are those in which unionism flourishes; and the unskilled trades those in which unionism is weak or practically unknown. Says the United States Industrial Commission: "It may be laid down as a general proposition, almost axiomatic, that strikes are more likely to occur in trades or under conditions where there is a reasonable chance of success than where there is little chance of success. The chance of success is greater where workmen are most necessary to the employer, and where they are most intelligent, best paid, and most strong generally. . . . It obviously follows that strikes will usually be most prevalent in organized trades."⁴

The increasing per cent of union strikes and the decreasing per cent of non-union strikes, also, show nothing vital against the union, for much of that is probably due to the increase of territory covered by the union, so that men who formerly struck as non-union men became organized and struck as unionists.

¹The average depends upon the particular period accepted as the basis.

²U. S. Labor Department Repts. (Strikes and Lockouts). C. D. Wright—N. Am. Rept. Vol. 174. Gilman: Methods of Industrial.

³U. S. Industrial Commission, Vol. 17, p. 638-9.

⁴Ib., p. 639.

Yet these curves very definitely explain the contention relative to the effect of tradeunionism upon the increase or decrease of strikes. The explanation is found when the curves of the per cent of strikes are compared with the curves of the per cent of establishments and employees affected by those strikes. Note the curves in the case of union strikes. For the first ten years of the period (1881-1900) the per cent of union strikes increases more rapidly than either the per cent of establishments or employees affected by strikes. For the last ten years the very opposite is the course of development,—the per cent of union strikes increases much more slowly than the per cent of establishments and employees affected by union strikes. This exactly coincides with the movement of tradeunionism itself. During the first ten years, unions were generally, (not all) newly organized, many times for the express purpose of remedying some grievance by means of a strike. During the last ten years, unions had generally become comparatively more experienced.

The curves show, therefore, that newly organized unions generally strike very frequently,—the number of strikes increasing more rapidly than the number of establishments and employees affected. But as the unions become experienced and have remedied the immediate grievances for which they were formed, they tend to *check the number of strikes and increase the size of the strikes*, i. e., the per cent of union strikes increase more rapidly than the per cent of establishments and employees involved.

Perhaps, this is better shown by the curves of Chart XI. Curves ($x-y$) and (x^1-y^1) show respectively the number of establishments and of employees affected *per strike*; i. e., they graphically indicate the average size of union strikes from year to year. A glance will show that they substantiate the results of Chart X. During the first stages of unionism the size of the union strike generally decreases,—then increases.¹ (Figures in Table XX.)

¹ Method—Divide the number of establishments and employees affected by the number of strikes for the same year. Smooth the curves.

Chart XI
Employees And Establishments Per Strike

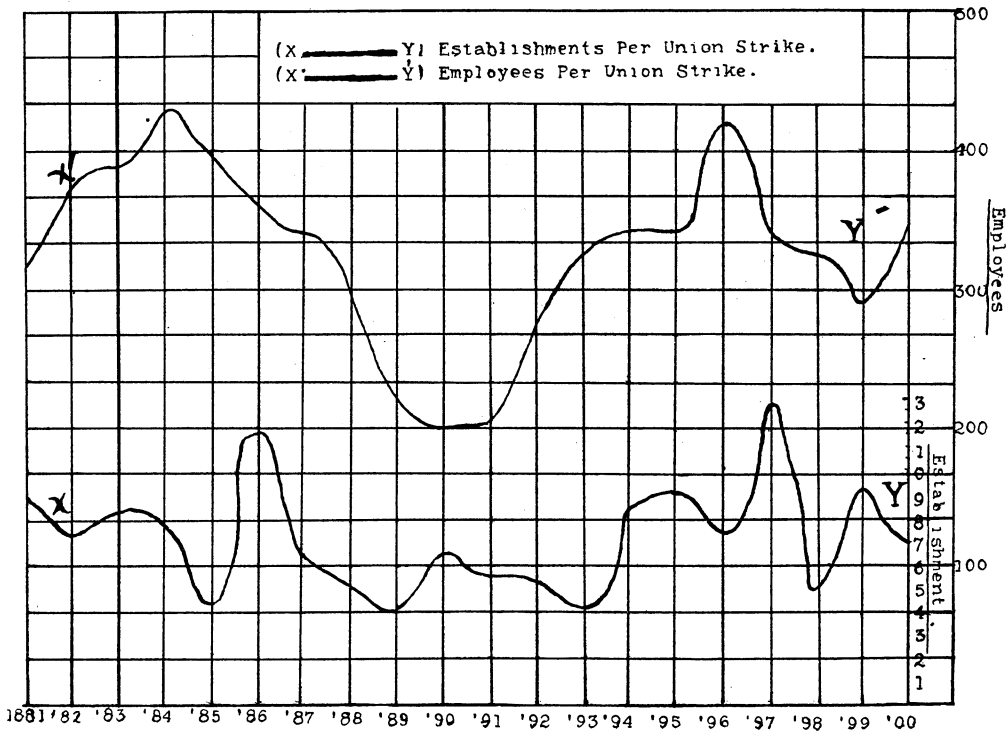


TABLE XXI.—*Employees and establishments affected per union strike.*

Year.	Union strikes.		Employees affected by union strikes.		Non-union strikes.	Employees affected by non-union strikes.
	Ab.	Sm.	Ab.	Sm.		
1881.....	222		72,052		249	57,469
1882.....	218		100,192		256	54,479
1883.....	271		97,843		207	51,920
1884.....	259		87,944		204	59,110
1885.....	361		159,677		284	83,038
1886.....	760		381,983		672	126,061
1887.....	952		279,728		483	99,944
1888.....	616		108,153		288	39,403
1889.....	724		192,580		351	56,979
1890.....	1,306		261,142		525	87,650
1891.....	1,284		226,437		432	65,502
1892.....	918		159,342		580	47,329
1893.....	906		201,055		399	64,879
1894.....	847		549,610		501	110,725
1895.....	658		270,699		555	121,619
1896.....	682		174,025		363	67,120
1897.....	596		301,285		482	107,106
1898.....	658		172,067		418	76,935
1899.....	1,115		295,492		682	121,580
1900.....	1,164		407,094		615	97,972

Year.	Employees affected per union strikes.		Employees affected per non-union strikes.		Establishments affected per union strikes.	Establishments affected per non-union strikes.
	Ab.	Sm.	Ab.	Sm.		
1881.....	324.5	324.5	230.7	230.7	9.9	2.8
1882.....	459.5	381.6	231.8	237.4	7.3	2.1
1883.....	361.	391.	250.8	218.7	8.5	2.1
1884.....	367.9	426.6	289.7	250.2	8.2	1.9
1885.....	442.2	393.5	292.3	245.0	4.4	2.3
1886.....	502.6	356.4	187.5	222.2	11.6	1.8
1887.....	293.8	336.	204.8	196.7	6.0	1.7
1888.....	175.5	288.	136.8	171.6	4.9	1.5
1889.....	265.9	222.7	162.3	164.4	4.1	2.1
1890.....	202.2	198.6	166.7	148.3	6.5	1.6
1891.....	176.3	207.7	124.6	153.5	5.7	1.4
1892.....	173.5	284.5	124.5	165.5	5.5	1.2
1893.....	221.8	326.3	162.6	176.9	4.4	1.8
1894.....	648.7	343.6	221.	182.4	8.5	1.8
1895.....	441.3	341.6	219.1	201.9	9.2	1.5
1896.....	262.8	419.5	184.9	206.2	7.4	1.5
1897.....	505.5	342.8	222.2	197.6	13.0	1.4
1898.....	269.6	330.5	184.0	185.7	5.0	1.4
1899.....	323.9	294.7	178.2	173.8	9.3	1.2
1900.....	323.8	349.7	159.3	159.3	7.2	1.3

Now it is essential to note that these statistics do not maintain that during the last ten years (1890-1900) the number of union strikes is decreasing. They still increase in number, and it is they that cause the increase in the total number of strikes. The point is that the increase is not as rapid as during the first ten years and not nearly as rapid as the increase in the number

of establishments and employees involved in these strikes. The charts do not show a check in the number of union strikes as compared with what would be the case if there were only non-union strikes; they merely compare the early stages of unionism with the later stage and show that with the later stage an element of restraint relative to the simple number of strikes is introduced.

What, then, is the effect of tradeunionism upon the increase of strikes? To speculate what would be the state of affairs if there were no unions is idle conjecture. The union must be accepted as a permanent and fixed institution, essential to complex industry because of many inherent difficulties and among them the necessity of striking. It is, therefore, infinitely more important to determine exactly what occurs under a regime of unionism than to speculate what would be the number of strikes if there were no unions. The answer to the contention, according to the charts is twofold:—The immediate effect of unionism is to increase the number of strikes very rapidly,—then with increased experience the effect is to inaugurate a policy of greatly increasing the size of the strikes side by side with a less rapid but yet permanent increase in the simple number of strikes. The ultimate effect, as unionism becomes better organized, is to check the number of strikes but to give them a more widespread effect and increased importance. There is no unqualified answer to the contention as to the effect of unionism upon the number of strikes, as there is at once an element of restraint and one of aggression.¹ There can, however, be little doubt that the element of restraint is introduced primarily to make the element of aggression the more effective against the employer. In the aggregate the increasing wide spread effect, introduced by the union, cannot be more vital to the country than the element of restraint.² The element of restraint con-

¹To still further show that, on the basis of the number of employees, the union increases strikes as it becomes older, it is well to recall Chart VIII. It shows that the great majority, out of the fifteen trades considered, indicate that the per cent. of employees on strike each year is generally increasing. These trades were chosen because they are the most highly and longest organized. The fact that the Chart is limited to only those states in which these trades are most highly and longest organized still further decreases the error in the Chart. The per cent. of the total number of employees in these trades is generally increasing. If it be true that old unions decrease strikes in every respect, this would not be the case.

²It was shown previously that the number of employees and establishments affected by strikes is in the aggregate a better standard to judge an increase or decrease by than the simple number of strikes.

sists merely of making the increase less rapid than when the union is newly organized. **On the other hand**, the number of employees and establishments involved in these strikes increases with the age and experience of the union. Both parties to the contention are partly right in their position, as the effect of unionism is both to increase and to decrease strikes but, in the aggregate, it seems that the element of decrease is much subordinate to the element of increase. On the basis of the number of strikes, unionism introduced a check; on the basis of the number of establishments and employees affected by strikes, it introduces an element of aggression.

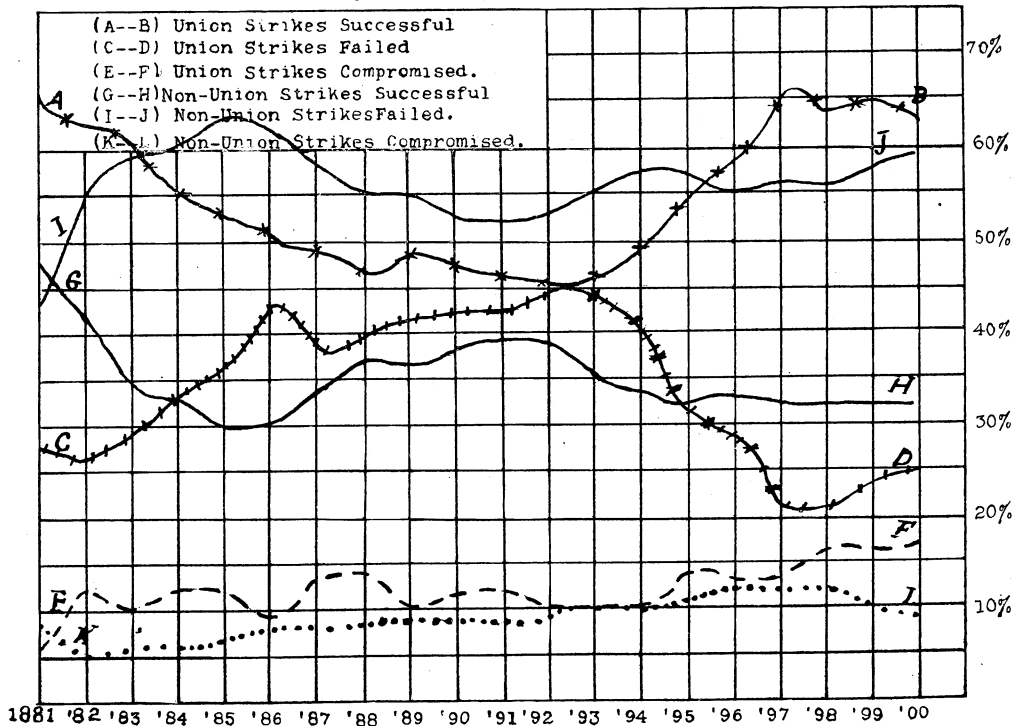
It is frankly admitted that these statistics do not furnish an unqualified demonstration, as new unions are constantly arising to-day. But the basis upon which they rest is fairly certain; first, because unions are *generally* older and more experienced to-day than twenty years ago; and second because unionism as a system is becoming older each year. Even admitting that the fallacy in the statistics is very large, it must be but a poor excuse to constantly attempt to shield the increase of strikes with a promise to change at some far off future time. Twenty years ago trade unionism claimed that strikes would decrease as trade unionism became older. The same claim is made to-day,—and yet there has been an increase in almost every phase of the strike throughout the entire period of statistics. If unionism wishes to decrease strikes, it must do something tangible in that direction. It cannot expect the community to rest upon unproved promises of future possibilities.

Another important effect of trade unionism upon the strike consists of its effect upon the "cause" of the strike. As was previously shown,¹ the per cent of strikes directly connected with wages and hours of labor is generally decreasing and the per cent concerning less standard matters is increasing. This shifting is an effect of tradeunionism. The very nature of the majority of those causes which are increasing in importance points to the presence of unionism. The "closed-shop" as a cause, union rules, recognition of union, etc., all show the effect of the union.

¹Chapter III.

Chart XII.

Success Of Union And Non-Union Strikes



This is further illustrated by the statistics of "causes" according to industries. The Industrial Commission indicates a series of highly organized trades as compared with a series of weakly organized trades.¹ Table XXII presents the per cent of strikes in these trades due to wages and the closed shop. Almost universally on the side of wages, the per cents are much higher for the weakly organized trades; while on the side of the closed shop the per cent is very generally the higher for the strongly organized trades.

The chief significance of this effect of tradeunionism has previously been explained.² In addition to that, it is to be noted that it introduces an element which could not appear in non-union strikes and that it augments the above shown effect of unionism upon the increase of strikes. Unionism increases the wide-spread effect of strikes; at the same time it connects that increase less and less with wages and hours and more and more with questions directly related to unionism itself.

Another effect of tradeunionism concerns the success and failure of strikes. Chart XII, in the form of "smoothed" curves³ indicates the per cent of success and failure of union and non-

TABLE XXII. — *Strongly organized trades.*

	Wages.	Closed shop.
	Per cent.	Per cent.
Glass trade.....	50.9	2.6
Tobacco trade.....	53.3	.9
Ship building.....	50.7	5.5
Stone cutting.....	41.6	9.3
Brewing trade.....	32.2	2.8
Building trades.....	42.7	5.5
Printing trades.....	45.1	6.7

Weakly organized trades.

Coal and coke.....	72.9	.3
Carpeting.....	90.2	.8
Cotton goods.....	68.4	1.0
Brick industry.....	42.1	1.2
Rubber.....	50.8	1.6
Woolens.....	71.8	0.3
Boots and shoes.....	66.1	5.3
Paper.....	80.0	0.0

16th Annual Report U. S. Dept. of Labor.

¹ U. S. Industrial Commission, Vol. 17, p. 640.

² Chap. 111.

³ Five year average.

union strikes. In the aggregate the majority of union strikes are successful while the majority of non-union strikes are failures. This difference between the success and failure of union and non-union strikes is great enough to overcome the difference in the nature of organized and unorganized employment and indicates the need of having tradeunionism to carry on a successful strike. Of equal importance, however, is the question as to whether this effect of tradeunionism is becoming greater or less. The curves show that for both union and non-union strikes there is, in the aggregate, no definite change in the per cent of success and failure from year to year, and that for both, the per cent of compromised strikes is increasing. In spite of the increasing improvement in the organization of the union, the per cent of success of union strikes is not increasing. Why is this? There is undoubtedly some connection between this and the above effect of unionism upon the "cause" of the strikes. As was previously shown, strikes concerning matters of tradeunionism are generally less successful than those concerning wages and hours. The comparative increase of the former class of strikes may therefore account for this fact that union strikes are not becoming more successful. If that is true, tradeunionism is placing a check upon the success of its strikes by the effect which it has upon the "causes" of strikes. (Figures are in Table XXIII.)

It would seem probable that foreign statistics are valuable here in as much as they would show the success in countries where tradeunions are numerous as compared with countries in which they are few in number. But such is not the case. There seems to be no logical connection between the extent of unionism in the various countries and the per cent of success of the strikes. Too many local differences exist to attempt to show the influence of unionism upon the success of strikes by comparing the statistics of different countries.¹

¹Foreign figures on success and failure, see accompanying tables on p. 134.

TABLE XXIII.—*Success of union and non-union strikes.*

Year.	Per cent. of Establishments in Strikes Not Ordered by Unions.			Per cent. of Establishments in Strikes Ordered by Unions.		
	Successful	Failed.	Compromised.	Success'f'l.	Failed.	Compromised.
1881.....	48	43.2	9	66	28	6
1882.....	40	55	5	62	26	12
1883.....	35	59	6	61	29	10
1884.....	34	60.1	6	55	33	12
1885.....	30	63	7	53	35	12
1886.....	30	62	8	51.4	43.1	9.2
1887.....	34	58	8	49	38	13
1888.....	37	55	8	47	40	13
1889.....	36	55	9	49	41	10
1890.....	38	53	9	47	42	11
1891.....	39	52	9	46	42	12
1892.....	38	53	9	45	45	10
1893.....	35	55	10	46	44	10
1894.....	34	56	10	50	40	10
1895.....	32	57	11	55	31	14
1896.....	33	55	12	58	29	13
1897.....	32	56	12	66	21	13
1898.....	32	56	12	63	21	16
1899.....	32	58	10	60	24	16
1900.....	32	59	9	58	25	17

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Another effect of tradeunionism upon the strike is to increase its duration.¹ The available statistics are not so tabulated as to show this effect, as they do not specify between union and non-union strikes. Even though these figures do not indicate an increase in the average duration, it is self-evident that the union strike is generally of much longer duration than the non-union strike. Even during the early history of American strikes those of long duration were usually under union direction. Common observation shows that strikes of to-day lasting

¹ *Average duration (days).*

Year.	Average.	Year.	Average.
1881.....	12.8	1892.....	23.4
1882.....	21.9	1893.....	20.6
1883.....	20.6	1894.....	32.4
1884.....	30.5	1895.....	20.5
1885.....	30.1	1896.....	22.0
1886.....	23.4	1897.....	27.4
1887.....	20.9	1898.....	22.5
1888.....	20.3	1899.....	15.2
1889.....	26.2	1900.....	23.1
1890.....	24.2		
1891.....	34.9	Total.....	23.8

for weeks and months are almost uniformly union strikes. In fact the fragmentary statistics given in the Reports of the Sec-

Results of foreign strikes.¹⁷

Year.	Great Britain.			France.		
	Successful.	Failed.	Compromised.	Successful.	Failed.	Compromised.
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
1879						
1880						
1881						
1882						
1883						
1884						
1885						
1886						
1887						
1888	1					
1889	29.0	12.5	55.1			
1890	54.4	25.9	16.9	11.4	64.7	23.8 ¹⁰
1891	25.5	34.7	36.7	20.6	29.5	49.8
1892	20.6	29.9	47.8	20.4	20.7	49.8
1893	64.3*	26.5*	9.2*	21.3	52.4	26.4
1894	21.0*	59.1*	18.9*	23.6	30.	45.4
1895	23.6*	29.8*	45.7*	18.7	36.2	45.1
1896	43.5*	28.0*	28.3*	23.2	42.5	34.2
1897	24.2*	40.7*	34.0*	28.8	29.4	41.8
1798	26.6*	60.1*	17.1*	12.9	47.4	39.0
1899	26.6*	43.6*	29.1*	11.9	17.5	70.6
1900	30.0*	24.7*	41.7*	10.8	26.1	62.9 ⁹
1901	27.4*	33.8*	36.7*	8.4	50.3	39.8*
1902	31.6*	30.4*	35.6*	11.0	13.3	72.5*
1903	30.9*	47.3*	20.7* ²	10.1	16.9	72.8*

Year.	Italy.			Germany.			Austria.		
	Succ'f'l.	Failed.	Comp'd.	Succ'f'l.	Failed.	Comp'e.	Succ'f'l.	Failed.	Comp'd.
	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.
1879									
1880									
1881									
1882									
1883									
1884									
1885	25.0	28.0	47.0						
1886									
1887									
1888									
1889									
1890									
1891									
1892	29.0	52.0	19.0						
1893	29.0	27.0	44.0						
1894	19.0	57.0	24.0						
1895	33.0	27.0	40.0				9.1	53.5	37.3
1896	49.0	20.0	31.0				12.8	26.5	60.7
1897	23.0	32.0	45.0				4.6	32.6	62.8
1898	27.0	42.0	31.0				15.7	36.5	47.8
1899	33.0	29.0	38.0 ⁷	26.0	41.0	33.0 ¹⁰	8.4	25.2	66.5
1900	43.0	26.0	37.0 ⁷	19.0	46.0	35.0	10.2	17.8	72.0
1901	26.0	24.0	50.0 ⁸	19.0	54.0	27.0	4.6	9.8	85.0 ¹³
1902				22.0	56.0	22.0	20.1	32.0	47.8 ¹⁴
1903				22.0	46.0	32.0	13.7	33.5	52.6 ¹⁵

retary of the American Federation of Labor are generally higher than the average duration for the total number of strikes, thus substantiating the statement that tradeunionism increases the duration of strikes.¹

Finally, the union tends to "commercialize" the strike;² i. e., it tends to make the strike more of a business proposition. The statistics previously presented to show the effect of unionism upon the increase of strikes point in this direction. They indicate that there was a tendency on the part of the unions to in-

Results of foreign strikes (continued from page 134).

Year.	Belgium.			Holland.			Canada. ¹⁸		
	Succ'f'l.	Failed.	Comp'd.	Succ'f'l.	Failed.	Comp'd.	Succ'f'l.	Failed.	Comp'd.
	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.
1879..									
1880..									
1881..									
1882..									
1883..									
1884..									
1885..									
1886..									
1887..									
1888..									
1889..									
1890..									
1891..									
1892..									
1893..									
1894..									
1895..									
1896..	6.8	85.81 ¹⁶	5.9						
1897..	5.4	78.8	12.2						
1898..	18.1	73.1	8.1						
1899..	8.7	89.4	1.7						
1900..	16.8	62.9	15.3	33.8	28.6	14.7	37.8	33.8	21.3
1901..				39.2	30.3	22.6	36.8	28.	26.4
1902..				24.7	40.1	29.4	28.1	28.7	28.7
1903..							23.3	33.0	27.1.04

*Strikes and lockouts.

¹Not including the indefinitely settled strikes.

²N. Y. Bul. Labor, 22:326.

³16th Annual Report U. S. Dept. of Labor.

⁴U. S. Labor Bul., Vol. 8, p. 1088.

⁵Ib., Vol. 55, p. 660.

⁶Canada Labor Gazette, Dec., 1904.

⁷U. S. Ind. Com., Vol. 17, p. 688, for years 1799-1898.

⁸U. S. Labor Bul., Vol. 8, p. 376.

⁹Ib., Vol. 56, p. 286.

¹⁰On basis of the number of strikes. Figures from "Strikes and Ausparrum-
gen," 18'9-1902, and from U. S. Labor Bul., Vol. 56, p. 275, for 1903.

¹¹U. S. Ind. Com., Vol. 17, p. 686.

¹²16th Annual Rept. U. S. Labor Com.

¹³U. S. Bul., Vol. 8, p. 376.

¹⁴Ib., Vol. 56, p. 263.

¹⁵Ib., Vol. 56.

¹⁶Ib., p. 294, not including those indefinite or unknown.

¹⁷On basis of number of strikes. From Canada Labor Gazette, Jan., 1905. Not including those indefinitely settled or unknown.

¹Reports of American Federation of Labor, 1896 to 1903.

²Adams: Labor Problems.

crease strikes in the aggregate, but that the increase was marked by a checking of the simple number of strikes, side by side with a much greater increase of the number of employees and establishments involved in the strikes. Do not strike wildly, but regulate the strike so as to make success more probable; wait until the strike can assume some proportion; the widespread effect of nine large strikes is more likely to bring success than the effect of ten smaller strikes.¹

This regulation appears not only in the increase of strikes. As the union becomes experienced, the element of time receives more consideration than it does at the hands of either newly organized men or non-union men. Those periods and seasons are selected in which the employer can least afford to withstand a strike. The maxim becomes to strike when the strike causes the greatest loss and inconvenience to the employer. The trade union recognizes that a careful selection of time increases the probability of success.

Again, the element of union regulation appears in connection with strike methods. Undoubtedly violence abounds in the modern strike,² and many times "slugging crews" and "wrecking crews" are organized by unions. Yet the increase both in number and size of the strike must be noted. The greatest wonder is that there is not more violence than there is. Strikes appeared every year during the last five years, in which thousands of men were idle for weeks at a time, with the hope of success often yielding before the coming failure, and yet violence among these men was not much more prevalent than during normal conditions of industry.³ This cannot but indicate regulation. Violence is prevalent, but if there was no regulation it would probably be more so. This is the natural complement of the regulation of the increase of the strike. The two movements manifest that the union tends to "commercialize" the strike so as to have it depend more and more upon the economic necessity of the employer rather than upon violence.

There is still other evidence of "commercialization." The

¹This, again, is not a comparison of union with non-union conditions but of the old vs. the new union.

²Outlook, 78: 969 (S. Thompson), Thoughts of Employers' Associations, etc.

³Outlook, Vol. 78, 972 (Povitt); Commons: Chicago Stock Yards Strike, etc., etc.

increasing use of strike funds and the growing agitation in favor of them¹ point toward the growth of business methods. The movement toward National Control² over the strike of the local points in the same direction. Again, the growth of "industrial unionism"³ is as evidence of the attempt to make the strike reach the economic necessity of the employer. The rapid extension of unionism toward the unskilled laborer, also, leads to larger strikes and strikes which on the one hand require increased regulation to make them succeed and on the other hand make it more easily possible for the strikers to depend upon business regulation rather than violence.⁴ Finally, many unions have constitutional provisions and by-laws directly regulating the initiation of strikes.⁵

¹Mitchell: *Organized Labor*, etc.

²Adams: *Labor Problems*; Industrial Commission, Vol. 17.

³English Walling: *An. Am. Acad.*, Sept., '04.

⁴That is, the skilled men strike with the unskilled, the one kind of labor aiding the other so as to make it the more difficult for the employer to secure new employees.

⁵U. S. Industrial Commission, Vol. 17; Separate Constitutions of various unions.

CHAPTER V.

CONCLUSION.

The central purpose of this monograph is to indicate statistically the course of movement or evolution of the strike. It may be maintained that it is of far greater importance to determine whether the strike is inherently a bad or a good institution. Yet it is essential to note that, until some other institution is introduced, the strike, whether inherently good or bad, is absolutely necessary to protect the interests of the workman. No such an institution, however, has as yet been contrived. The most vital problem connected with the strike, therefore, does not pertain to its inherent qualities, but to the particular way in which it is developing. Until some substitute for the strike is found, the primary consideration must be, not whether it is inherently dangerous, but whether it is being dangerously used; i. e., whether the way in which it is moving is or is not dangerous.

With this in mind, the strike statistics are tabulated so as to indicate a growth or movement as distinguished from a stationary condition. It is intended to indicate exactly what the development is and to let the reader interpret its meaning. Statistically to determine the actual movement is one part of the problem; to determine whether that movement is good or bad is another.

In the first place, the statistics demonstrate that strikes in the United States are increasing. The *absolute increase* is very rapid. The number of strikes, number of establishments affected by strikes, number of employees affected by strikes, number of strikers and the amount of wage loss due to strikes, are all increasing. The *relative increase* is slow but yet steady. The statistics in the case of relative increase are admittedly in-

accurate, but to overcome this inaccuracy many different sets of statistics were computed. Whatever statistics were employed in the computation, the result in each case was a slow increase of strikes relative to the growth of American industry.

American statistics were supplemented by statistics of European strikes. These supplementary statistics show that the strike movement either is assuming or has already assumed large proportions in practically every important industrial country of Europe, and that with the exception of England strikes are increasing in every country which was investigated.

In the second place, the statistics show what the increase of strikes really consists of; i. e., the strikes are arranged according to the purpose at which they aim. It is found that in the United States certain causes are increasing and others are decreasing in importance. The purpose of the strike is being changed; there is a shifting from one set of causes to another. The movement is away from those causes which are generally designated as standard causes and in the direction of causes which are at least more questionable. The statement that wages and hours are the cause of nearly three-fourths of all the strikes in the United States is emphatically denied by the statistics. Wages and hours are still the most important causes but their relative position is rapidly decreasing, and the per cent of strikes in the United States due to other than purely standard causes is rapidly increasing.

In the third place, the statistics indicate how the strike is being influenced by tradeunionism; i. e., how the character of the strike is changing. On the basis of the number of strikes the effect is to check the increase as tradeunionism becomes older and more experienced; on the basis of the number of employees and establishments affected by strikes the effect is to accelerate the increase. The character of the strike is being changed by the union so that it is becoming of increasing widespread importance to both parties and to the community at large. Again, tradeunionism makes the strike a more formidable weapon as is shown by the much greater success of union strikes as compared with non-union strikes. At the same time it is important to note that union strikes are not becoming more

successful even though unionism is being more and more thoroughly organized. Again, the union strike is generally of greater duration than the non-union strike. Furthermore, trade-unionism affects the causes of strikes by reducing the importance of the purely standard causes and increasing the importance of "tradeunionism" as a cause of strikes. Finally, trade-unionism tends to "commercialize" the strike. This means on the one hand, a still further extension of its affect upon the industrial community, and on the other hand, greater and more skillful control of every phase of the strike by organized labor.



PART III.

LIQUOR TRAFFIC IN WISCONSIN.

Inquiry Pursuant to Chapter 418, Laws 1903.

THE LIQUOR TRAFFIC IN THE UNITED STATES.

INTRODUCTION.

The use of alcoholic liquors is quite generally recognized to be detrimental to the best interests of society. Notwithstanding the prevalence of this belief surprisingly little has been done toward gathering a body of definite information concerning the magnitude of the interests involved in the manufacture and retail of liquors, the effects of their use on the public and the relative merits of the various plans looking toward the discontinuance of such use. The starting point of effective regulation must be based upon an accurate, scientific, knowledge of the conditions that create and maintain the traffic in liquors; yet the only important investigation so far made with a view to the attainment of such knowledge is the inquiry conducted by the Federal Department of Labor, the results of which are given in the Twelfth Annual Report of the Commissioner of Labor, 1897-1898, "Economic Aspects of the Liquor Problem;" the study prosecuted by the Economic Sub-Committee of the Committee of Fifty, an account of which is published in a volume bearing the same title as the Federal report; and the investigation made by the Massachusetts Bureau of Labor reported in its Twenty-sixth Annual Report, "The Relation of the Liquor Traffic to Pauperism, Crime and Insanity."

The effort here made is to combine in a brief space the facts brought to light by these investigations together with such observations as they seem to warrant. Original treatment of the general aspects of the liquor problem in the United States has

not been aimed at. The tables given have been arranged in the same form as those in the Federal report. For the most part they have been brought down to date by reference to the Twelfth Census Report, The Annual Statistical Abstracts of the Treasury Department and the Reports of the Commissioner of Internal Revenue; the remainder have been transferred directly from Federal Labor Report as no more recent data was available. The summaries on the effect of the liquor traffic were for the most part taken verbatim from the Massachusetts report and the Report of the Committee of Fifty. While no addition has been made to the sum of human knowledge, still the facts submitted constitute the most recent available information on the relations of the liquor traffic to society in the United States and it is hoped that their presentation in this form will not be without value to the student of the liquor problem.

The discussion of the subject falls naturally under three heads; the strength of the liquor traffic, the magnitude of the interests involved in the manufacturing and retailing of liquors, roughly the force working for the continuation of the traffic; the effects of the traffic, the impairment of social, physical and industrial vigor resulting from the use of intoxicants; finally the outlook for reform, the scope and success of the efforts to counteract or do away with the traffic. Fairly adequate data exist for the study of the first subdivision only. The investigations under the second head have been too restricted both in the area covered and in point of time over which they were extended to furnish a very satisfactory basis for deduction while comparatively little has been done toward the scientific study of the merits of the various plans offered as a solution of the liquor problem.

CHAPTER I.

THE MAGNITUDE OF THE LIQUOR TRAFFIC.

SECTION 1. INTRODUCTORY.

The proper scope of an investigation under this head is set forth in the introduction to the Federal Labor Report from which the material for this chapter has for the most part been drawn.

“A report on the economic aspects of the liquor problem to cover the various phases of the subject should consider monetary conditions; the agricultural and other products used in the production of liquors; the manufacture of liquors as a distinct industry; the transportation of liquors from the place of production to that of consumption; the consumption of and the traffic in liquors; the revenue derived from the manufacture and traffic; the laws regulating the collection of revenue; and the experience and practice of employers in relation to the use of intoxicants.

“The agricultural products used in the manufacture of liquors form as a rule, a very small proportion of the total of such products, and it is therefore not possible to ascertain the capital, the number of employes, etc., represented by such portion. The transportation of liquors forms a very small proportion of the land and water transportation business of the whole country, and it is impossible to estimate the capital and number of employes represented by it. Of the remaining subjects enumerated above, reliable and fairly complete data in regard to the production of liquors were found in the reports of the Commissioner of Internal Revenue and the publications of the census office. To obtain information in regard to the traffic in liquors

and the revenue derived from the manufacture and traffic, as well as the experience and practice of employers in relation to the use of intoxicants original inquiry was necessary."

It should be added that all discussion of the laws relating to the collection of revenue has been omitted while the material on the experience and practice of employers in relation to the use of intoxicants is taken up under another head. As before stated, the facts here presented are arranged in the same form as in the federal report, along the lines suggested in the above quotation. The aim has been to bring that report down to date so far as possible and at the same time to eliminate various minor tables which are not deemed important. Wherever possible the tables have been compiled from the original reports, the census figures being for 1900 instead of 1890 and those from the Internal Revenue reports for 1903 instead of 1896.

SECTION 2. THE PRODUCTION OF LIQUORS.

Table I shows the number of breweries and distilleries in operation in the United States and the quantity of production, also an estimate of the quantity of domestic wines produced during each fiscal year from 1880 to 1903 inclusive. The table is compiled from the reports of the Commissioner of Internal Revenue and from the Statistical Abstract of the Treasury Department and while not absolutely correct in every detail, it shows in an entirely satisfactory way the trend of the production in the various industries.

It appears that the output of fermented liquors has been steadily increased from 13,347,111 barrels in 1880 to 46,720,179 barrels in 1903, the highest point yet reached in their production. There were but two years, 1894 and 1899, in which the output was less than in the year preceding. The production of fermented liquors has more than tripled since 1880. Significantly enough the production of both distilled spirits and of wines was larger in 1902 than it had ever been in the history of the country. It cannot therefore be truthfully said that the production of fermented liquors is driving out the other industries. Indeed as the Federal Labor re-

port says: "There is no apparent relation between the two." The production of distilled spirits was 91,378,417 gallons in 1880, this increased to 119,528,011 gallons the next year; then again came a period of decreased production which continued until 1890 when 111,101,738 gallons were produced. The rise continued until 1893 when it culminated with an output of 131,010,330 gallons. In the decline which followed, the lowest point of production for the entire period was reached, 64,279,075 gallons in 1897. Since then there has been a marked increase. The highest point the production has yet reached was attained in 1903, with an output of 148,206,875 gallons. From these figures the only generalization safely to be made is that the distilled liquor industry is subject to alternate periods of high and low production. The general tendency however is upward but that tendency is by no means as marked as the course of production for malt liquors.

The column representing the production of wines exhibits an even greater irregularity. The explanation here readily suggests itself. The amount of wine produced is directly and entirely dependent on the grape crop which is always uncertain. The great bulk of the wines consumed are of American production and the low per capita consumption of wines as compared with the other two kinds of liquors may be thus accounted for.

The course of production of the various kinds of distilled spirits such as bourbon whisky, rye whisky, alcohol, rum, etc., has not been discussed because such discussion would have neither significance nor profit.

Table II taken from the twelfth census shows for the United States the number of establishments, the capital, number of salaried officials, wage earners and total wages paid, the cost of materials used and the value of the products resulting. It will be noticed at once that according to the reports of the Commissioner of Internal Revenue as shown in Table I there were 3,614 distilleries in operation in 1900 and 1,816 breweries while the census report gives but 967 distilleries and 1,509 breweries. The discrepancy is explained as follows: "A large proportion of the distilleries shown by the internal revenue reports to have been in operation were small establishments engaged in distili-

ing fruit brandies and in operation for only a short time in the fall of the year. The number of distilleries shown by the census reports is the number that was in operation at the time of the enumeration during the month of June and would necessarily not include the fruit distilleries referred to. This condition may also account in part for the discrepancy in the number of breweries shown by the reports of the two offices, as the number given on the internal revenue reports is the number paying the internal revenue tax, irrespective of the length of time they were in operation during the year, while the number given in the census report is the number the enumerators found in operation. The discrepancy is also accounted for in part by the fact that when two or more distilleries or breweries were owned by the same corporation, firm or individual, and located in the same county or city, they were counted as one establishment in the census reports. In the internal revenue reports the actual number of distilleries in operation and the number of internal revenue stamps issued to breweries are shown. Then in all probability the census enumerators neglected to report some establishments that should have been reported."

The tables should therefore be accepted with the above cautions. There is no reason to doubt, however, the substantial accuracy of the figures presented and the conclusions drawn from them may safely be relied upon, as the output of the omitted establishments is in most cases relatively small.

From the table it appears that the total amount invested in the production of alcoholic liquors, represented by 2,385 establishments reporting, was \$457,674,087; the cost of materials used was \$70,512,042; the wages paid to the 52,575 employes amounted to \$42,307,128 and the total value of the products was \$340,615,466. Table III presents a comparison with the two preceding census years, 1880 and 1890. The table seems to warrant the conclusion that there is no relation between the number of establishments and the output or perhaps more accurately that the census figures as to the number of establishments are without significance. It appears from the table that there has been a decided increase in the amount of capital invested, the number of men employed, the wages paid and the

value of the product; at the same time there has been a marked decline in the cost of the materials used. There is no reason to think that this is entirely due to a general decline in the price of the materials used nor to an increased efficiency in the methods of production. The explanation is more probably due to the fact that much of what might properly be given under the heading "cost of materials" appears under a heading omitted from the comparison, namely, "miscellaneous expenses."

To take up the classes of liquors separately, Table II shows that there were 1,509 establishments engaged in the production of malt liquors with a capital of \$415,284,468; that they employed 7,153 salaried officials and clerks receiving for their services \$13,046,540, and 39,532 wage earners who were paid \$25,826,211. The miscellaneous expenses were \$109,329,231; the materials used cost \$51,674,928 and the product was valued at \$237,269,713.

Nine hundred sixty-seven establishments were engaged in producing distilled liquors. Their capital was \$32,551,604. In their employ were 661 salaried officials to whom was paid \$889,606 and 3,722 wage earners who received \$1,733,218. The miscellaneous expenses aggregated \$73,218,227. The materials used cost \$15,147,784 and the value of the product was \$96,798,443.

There were but 359 establishments reported as manufacturing vinous liquors; their capital was \$9,838,015. In their employ were 661 salaried officials to whom were paid \$365,498. The wage earners numbering 1,163 received \$446,055. Miscellaneous expenses amounted to \$552,338; the cost of materials was \$3,689,330 and the product was valued at \$6,547,310. The cost of materials approximates the value of the output much more closely in the case of vinous liquors than in malt or distilled liquors.

Table IV is a presentation of statistics relative to the manufacture of malt. This industry is one which depends for its existence almost entirely on the fermented liquor industry; for this reason an adequate presentation of the scope and influence of the liquor industry involves the statistics for malt as well. The table shows that since 1880 there has been a marked ten-

dency toward concentration in this as well as in other industries. The number of establishments declined from 216 in 1880 to 146 in 1900. The decline may be ascribed in part, however, to the fact that many of the larger breweries have undertaken the manufacture of malt for themselves. We find that the amount of capital invested has almost tripled in the two decades since 1880. Every other element in the presentation, however, underwent a rise from 1880 to 1890, followed by a decline in the latter decade. The number of employes increased from 2,332 in 1880 to 3,694 in 1890 and then fell to 2,280 in 1900. The wages paid began at \$1,004,548 in 1880, increased to \$2,103,200 in 1890, then declined to \$1,653,829 in 1900. The cost of materials was \$14,321,423 in 1880; \$17,100,074 in 1890 and \$14,816,741 in 1900. The value of the product for the different years was as follows: \$18,273,102 in 1880; \$23,442,559 in 1890 and \$19,373,600 in 1900.

A consideration of the materials used in the manufacture of alcoholic liquors is of importance in this connection. Table V is a presentation of these facts for distilled spirits. The amounts of malt, wheat, barley, rye, corn, oats, etc., used in its manufacture are given. It is seen here that the amounts of malt, rye and corn are the largest used in the history of the industry. Wheat, barley as such, oats and mill-feed are used in varying but on the whole, steadily decreasing amounts. The most significant fact in the table is the enormous increase of molasses as an element in the production of distilled spirits. In 1880 the amount of molasses used was 2,710,307 gallons; in 1903 over five times that amount or 15,544,360 gallons. The total amount of grain consumed was 24,006,359 bushels in 1880 and 30,296,549 bushels in 1903. In 1881, however, at the very beginning of the period the amount was 31,291,175 bushels, the largest amount used during any single year of the twenty-three.

Table VI embodies a presentation of the facts for the malt liquor industry derived from the census of 1900. It appears that in that year 36,385,365 bushels of malt were consumed; 11,232,599 bushels of barley, 483,998,984 pounds of corn and 37,465,811 pounds of hops.

Attention is called in this connection to the fact that the hop industry is fostered almost exclusively by the production of malt liquors. According to the report of the twelfth census the hop crop for 1899 amounted to 49,209,704 pounds of which 37,465,811 pounds were used in the manufacture of malt liquors.

To ascertain the relation of the total crop output of the country to the amount used in the liquor industry it is necessary to change the malt into its equivalent in barley. According to the labor report based on the records of the internal revenue department which are inaccessible for the purposes of this discussion, the total amount of barley used in the manufacture of alcoholic liquors in 1896 was 32,436,471 bushels.

In that year the production of beer was but 35,859,250 barrels as compared with 46,720,179 in 1903. Assuming a proportionate increase in the amount of barley used, 40,000,000 bushels would seem to be a safe approximation of the amount used in the production of alcoholic liquors. The census estimate for 1900 is that 483,998,984 pounds of cerealin were used in the manufacture of malt liquors. Changing this into bushels, 56 pounds to the bushel, we have 8,642,839 bushels. When it is remembered that the output of beer increased from 36,697,157 to 46,720,179 barrels in 1900 it is but fair to assume a like increase in the amount of corn used. Ten million bushels seem a conservative estimate of what is used in the production of malt liquors. Adding this to the 20,597,594 used in manufacturing distilled liquors we have 30,597,594 as the total number of bushels of corn consumed. The rye used in the production of alcoholic liquors is put at 5,873,226.

The total crop of each of these products according to the crop register published by the department of agriculture is as follows: corn 2,244,176,925 bushels; barley 131,861,391 bushels; rye 29,363,416 bushels. Approximately one per cent of the total corn crop, about one-third of the barley crop and something like one-fifth of the rye crop were used in the manufacture of alcoholic liquors.

The liquor industry ranks seventh among the great industries of the country in the value of its product. Classified as

to the amount of capital invested but four industries, the iron and steel, gas, lumber and cotton manufactures, respectively, have a greater amount invested than the liquor industry.

SECTION 3. THE CONSUMPTION OF LIQUORS.

Table VII compiled from the Statistical Abstract shows the total and per capita consumption of the great classes of liquors, wines, malt or fermented liquors and distilled spirits. It appears that in 1902, 49,754,403 gallons of wine were consumed, 1,381,875,437 gallons of malt liquors and 107,452,151 gallons of distilled spirits; a total of all kinds of spirits and liquors of 1,539,081,991 gallons.

Having regard to the per capita consumption we are led to conclusions directly opposite to those of the federal labor report in 1897. It was there stated that there had been a marked decline in the per capita consumption of both distilled spirits and wines. The very next year after that report was made we find that the per capita consumption of wine more than doubled (as did the crop); rising from .26 to .53 gallons while in 1902 it was .63 gallons per capita, the highest point it has reached in the history of the nation. It should be added that in 1903 it fell to .49 gallons. The increase in the per capita consumption of malt liquors has been decided and almost unbroken. It began at 1.36 gallons in 1840 and reached its highest point at 18.04 gallons in 1903. Distilled spirits whose per capita consumption was 2.52 gallons in 1840 stood at 1.46 in 1903, the highest it had been since 1893.

In connection with the Eleventh Census an investigation was made to ascertain the quantity of distilled spirits consumed in the arts, manufactures and medicine, and it was found that 10,976,842 gallons were thus consumed. No similar investigation was made in 1900, but it is reasonable to suppose that the amount consumed was at least as great. It is possible, indeed, that the increase in per capita consumption may be explained through a stimulus to the manufactures and arts requiring distilled liquors, or more probable there may have been a great increase in the preparation of patent medicines. In the absence

of statistics on this point it is impossible to draw any conclusions with absolute certainty.

The tendency in the consumption of liquors as a whole gives an increasing predominance to the use of malt liquors, not, however, as is often stated to the exclusion of the others as beverages. The consumption of wine is of course more or less fortuitous, depending on the production of domestic wines each year. The consumption of distilled liquors since 1880 has varied between 1 and 1.50 gallons but shows a tendency to remain in the neighborhood of 1.25. It has been said that while there has been an increase in the per capita consumption of all liquors from 4.17 gallons in 1840 to 19.99 in 1903 the increase has mainly been in the consumption of fermented liquors which contain a much smaller proportion of alcohol, so that the per capita consumption of alcohol is on the decline. This may be doubted. It can safely be said, however, that there has been no marked increase in the amount of alcohol consumed.

A study of the table reveals the fact that the amount of liquor consumed is directly dependent on the general prosperity of the country. In 1893 just before the crisis the consumption of all kinds of liquors stood at what was apparently its highest point. With the crash following, the consumption in all lines underwent a marked decline. Then after a few years the consumption increased again and the present tendency is upward.

Compared with European countries our consumption of liquors is decidedly low. As a beer-drinking country the United States in 1900 ranked but sixth. The order was as follows: Belgium 54.0 gallons per capita; the United Kingdom 38.9 gallons per capita; Germany 33.9; Denmark 24.0; Switzerland 18.0; the United States 16.0. In 1900 France, Germany, Austria, Holland, Belgium and Sweden each consumed two gallons and over of spirits per capita.

SECTION 4. THE TRAFFIC IN LIQUORS.

Chapter IV of the Twelfth Annual Report of the Labor Department is devoted to a discussion of the traffic in liquors. The returns which form the basis of the discussion were ob-

tained as the result of an investigation specially conducted by the department and no like figures are available for any subsequent period. The investigation was confined to a limited sphere and on the basis of the results thus obtained estimates for the whole United States were made. The method of making the estimates is not important and will not be considered and no detailed presentation of the various minor facts will be attempted. Such general conclusions as are thought of interest will be given but it must be borne in mind from the outset that these generalizations are estimated on the basis of facts secured for but a small part of the total number of the establishments engaged in the traffic.

For the year ending June 30, 1896, the capital invested exclusively in the liquor traffic by 161,483 establishments was \$957,162,907. Of this amount \$412,188,729 or 43.06 per cent represented the value of land and buildings, fixtures and other properties owned by the persons or firms carrying on the liquor traffic, and \$544,974,178 or 56.94 per cent the value of the property rented by them. The estimated annual taxes paid on the property were \$10,075,120 and the rent paid on the rented property \$51,265,465. The estimated number of proprietors or firm members engaged in the liquor traffic was 191,519 and the employes 241,755. If the employes had devoted all their time to the liquor traffic, it is estimated that it would have required 172,931 to carry on the business of the 161,483 establishments.

Adding this capitalization to that represented by the manufacture of alcoholic liquors, \$457,674,087, and the amount invested in the closely allied industry, the manufacture of malt, \$39,288,102, we have a total of \$1,454,125,096. Roughly speaking, a billion and a half dollars are employed in the manufacture and sale of alcoholic liquors. The number of proprietors, salaried officials and wage earners is 488,129. In other words the manufacture and sale of liquors directly employ half a million men. This leaves out of consideration entirely those employed in raising the products which go into the manufacture of liquors or those given employment in the transportation of the raw material and the manufactured article. Assuming that

each of these supports a family of four we find that two million people are dependent on the liquor industry for their livelihood. One may venture the assertion that the manufacture and sale of no other single commodity directly affects the lives of so great a number of people.

SECTION 5. TAXATION.

Not only is the liquor industry of tremendous importance viewed in its direct relation to society as one of the great industries of the country but it has a further significance because under our present governmental policy, the government is deriving a large and an increasing proportion of its revenue from this source.

The revenue derived from liquor manufacture and traffic consists of the general tax levied on real and personal property employed in such manufacture and traffic; the United States internal revenue tax; the customs duties on imported liquors; the license fees or special taxes collected under authority of the States, counties and municipalities, and the fines collected for violations of the internal revenue laws and of the laws of the states, counties and municipalities controlling the manufacture and traffic.

Table VIII shows the facts as estimated for 1896 by the department of labor. The total taxes as given in the twelfth annual report were \$183,213,124.51. It will be noted in the table that the United States internal revenue tax has been increased from \$114,450,861.77 to \$179,401,328.47, or \$64,950,456.70. It is safe to argue that there is some, if not a proportionate increase in the other items which go to make up the total. Conservatively estimated, therefore, upwards of \$250,000,000.00 is annually derived from the taxes on the manufacture of and the traffic in alcoholic liquors. The total revenue derived from all sources and for all purposes in the United States aggregates \$1,250,000,000. It may be stated with some degree of confidence therefore that from one-sixth to one-fifth of the money expended for governmental purposes in the United States is drawn from

the liquor business. There is every reason to believe that these figures are below rather than above the actual amounts. This enormous total emphasizes the degree to which the liquor industry has woven itself into the structure of not only our industrial and social, but also our governmental life. Here is a phase of the liquor question which must be taken into account by any proposed change in regulation of this traffic. There is another phase of the subject which will bear emphasis at this point. It has been stated by students of our system of taxation that the amount of revenue derived from the liquor business could be doubled without enhancing the price to the consumer. While this fact was pointed out to show the abundance of our fiscal resources, it must be apparent that the same amount which would be available for revenue purposes would be equally available for political corruption. It requires no great foresight, therefore, to warrant the prediction that in case the permanence of the liquor interest should be seriously threatened by proposed legislation, a powerful opposition would be met with on all sides and that opposition would be abundantly supplied with funds and influence with which to maintain its contention.

CHAPTER II.

THE EFFECTS OF THE LIQUOR TRAFFIC.

Regarded as a unit in the various phases of its manufacture and distribution—in the numberless ways in which it enters into our social, industrial and political life—the liquor industry is among the first in importance. It is of the most vital consequence, therefore, to know accurately the effect of this deep-rooted institution on the society that gives it life. The only serious or extended effort yet made by any state or governmental agency to study it in detail is that undertaken by the Massachusetts Bureau of Labor and reported in the twenty-sixth annual report of that bureau.

The scope and method of the investigation may be best stated in the language of the report: "The collection of information occupied twelve successive months. It was prosecuted through the different state institutions for the reception of paupers and the insane and through the prisons and courts of the commonwealth. All persons committed to these institutions or passing through the courts for criminal offences were directly interviewed by the agents of this department and their testimony taken concerning their habits with respect to the use of intoxicating liquors and as to the habits of their parents, guardians or others who may have exerted a direct influence upon them. The results of the investigation thus rest upon the direct testimony of those immediately concerned, except in the case of the insane who for obvious reasons were incapable of giving direct information themselves. Respecting the insane, therefore, the testimony of others has been taken and no effort has been spared to bring out full and reliable data covering the special

points of inquiry respecting each of the classes referred to. The inquiries were carefully formulated before beginning the investigation and the work carried out by agents of the bureau especially selected for the purpose."

The report covers 3,230 returns as to pauperism, 26,672 as to crime, and 1,836 as to insanity. The evidence condensed in the tables, therefore, rests upon personal interviews with respect to 31,738 cases of pauperism, crime and insanity and comprises the largest amount of direct information, that is to say, information secured by personal interviews with the persons immediately concerned that has ever been obtained.

The conclusions of the report occupying over four hundred pages are summarized as follows: "Out of 3,230 paupers, 2,108 or about 65 in every 100 were addicted to the use of liquor. The excessive drinkers numbered 505, about 16 in every 100. Of the total abstainers 429 were minors; 281 being under 10 years of age. There were also 31 minors addicted to the use of liquor. Excluding all the minors whether total abstainers or not, we have 2,752 paupers of adult years of whom 2,077 or about 75 in every 100 were addicted to the use of liquor, including 504 excessive drinkers and 1,573 drinkers not classed as excessive.

Of the whole number of paupers, nearly 48 in every 100 had one or both parents intemperate. Of the whole number, about 39 in every 100 attributed their pauperism to their own intemperate habits; about 5 in every 100 considered their pauperism due to the intemperance of their parents, one or both; and about 1 in every 100 attributed their pauperism to the intemperance of those upon whom they were dependent, other than parents.

Of the whole number addicted to the use of liquors, namely, 2,108, there were 25, or about 1 in every 100 who used wines only; 417, or about 20 in every 100 who used lager beer or malt liquors only and 1,628, or about 77 in every 100, more than three-fourths of the whole number, who used all kinds or at least two kinds of liquor.

Of the whole number of paupers (without discrimination as to sex) 2,005 or about 62 in every 100, used tobacco. Of the

males no discrimination being made as to ages, nearly 75 in every 100 used tobacco. Only three paupers were found among the whole number who used drugs intemperately.

CRIME.

Out of 26,672 convictions for various offences during twelve consecutive months, 17,575, or about 66 in every 100 were convictions for drunkenness; and 657, or about 2 in every 100 for drunkenness in combination with other offences. Hence 18,232 convictions, or about .68 in every 100 included drunkenness either wholly or in part.

In 21,863 cases, about 82 in every 100, the offender was intoxicated at the time the offence was committed. In 8,440 cases in which drunkenness did not form part of the offence, that is, in which the offender was convicted of a crime other than drunkenness, 3,640, or about 43 in every 100 were cases in which the offender was intoxicated at the time the offence was committed. Of these 8,440 cases, 4,852, or about 57 in every 100, were cases in which the offender was intoxicated at the time the intent was formed to commit the offence.

Out of the whole number of cases, namely 26,672, there were 22,514 in which the intemperate habits of the offender led to a condition which induced the crime. These constitute about 84 in every 100. Disregarding convictions connected with drunkenness there remain 4,294 convictions for other crimes committed under conditions created by the intemperate habits of the criminal. These constitute nearly 51 in every 100 of the total number of convictions for crimes other than drunkenness.

In 16,115 cases about 60 in every 100, the intemperate habits of persons other than the offender were said to have been influential in the commitment of the offence, and 3,611, or about 43 in every 100 of the total convictions for crimes other than drunkenness were of this class.

Of the total number of convictions, namely 26,672, the number of offenders addicted to the use of liquor (no discrimination being made as to sex) was 25,137, or about 94 in every 100.

The excessive drinkers numbered 4,516, about 17 in every 100, and the total abstainers numbered 1,535, about 6 in every 100. Of the total abstainers, however, 632 were minors. There were also 680 minors addicted to the use of liquor. Excluding all the minors, whether total abstainers or not we have 25,630 offenders of which number 24,457, or about 96 in every 100, were addicted to the use of liquor, including 4,482 excessive drinkers and 19,975 drinkers not classed as excessive. Of the whole number of offenders nearly 58 in every 100, had fathers who were addicted to the use of liquor while about 20 in every 100 had mothers addicted to the use of liquor.

Of the whole number of offenders addicted to the use of liquor, namely, 25,137, there were 126 or less than 1 in every 100 who used wines only; 4,923 or about 17 in every 100, who used lager beer or malt liquors only; 728, or about 3 in every 100 who used distilled liquors only; and 19,990, or about 80 in every 100 who used all kinds or at least two kinds of liquor.

There were thirty-five towns which changed their policy with respect to license during the twelve months covered by the investigation. Of these, fourteen show a larger average number of arrests per month under no license than under license, but the number in either case is quite small in these towns. In nineteen of the towns which changed their policy during the year, the average number of arrests for drunkenness was larger and usually considerably larger, under license than under no license. In five small towns there were no arrests for drunkenness under either system. In one town there was one arrest for drunkenness during four months of license and two during eight months of no license.

INSANITY.

Out of 1,836 cases of insanity, this being the total number found in the institutions canvassed during the twelve months, there were found 671 instances or about 37 in every 100 in

which the person was addicted to the use of liquor. The excessive drinkers numbered 311 or about 17 in every 100. The total abstainers numbered 677, or about 37 in every 100. Information as to the drinking habits of 488 or 26.58 per cent. of the whole number could not be ascertained.

As to the direct influence of the use of liquor upon insanity the following facts appear; of the whole number, 1,836, the investigation indicated that in 383 instances about 21 in every 100, the intemperance of the person led to his insanity. There were, however, 330 cases as to which the point could not be ascertained. Of the cases in which this point was fully determined, namely, 1,506, 383, or about 25 in every 100 became insane through their intemperate habits.

The Economic Sub-committee of the Committee of Fifty conducted its investigation with a view of ascertaining among other things: "The relations of the liquor problem to poverty and destitution as evidenced in the work of charity organization societies, almshouses and societies for the care of poor children; and its relations to crime as shown in some of the leading reformatories and state prisons of the country."

The attempt was made to cover a more extended field than was done by the investigation of the Massachusetts bureau of labor, by taking selected institutions distributed over the country. The inquiry as to poverty was divided into two parts; one consisting of queries to charity organization societies and allied bodies, from this source statistics relative to 29,923 cases of distress were obtained; the other branch of the inquiry had reference to the inmates of pauper establishments, almshouses, etc. A total of 8,423 inmates of fifty institutions in ten states is accounted for in the returns. No attempt will be made to offer a detailed presentation of the tabulated data contained in the report of the committee. A summary of the results is all that will be profitable in this connection.

Of the poverty which comes under the view of charity organization societies, about 25% can be traced directly or indirectly to liquor; 18% of the persons studied having brought on their poverty through the personal use of liquor, and 9% attributing it to the intemperance of parents or others. The general per-

centage is less than the sum of the partial percentages, because in some cases liquor acted as both a direct and an indirect cause.

Of the poverty found in almshouses, 37% can be traced to liquor and of this again 32% is due to the personal habits of the inmates, and 8% to the intemperance of others. In the case of the destitution of children, not less than 45% was found to be due to the liquor habits either of parents, guardians or others.

The investigations as to the percentage of crime due to liquor covered 13,402 convicts in seventeen prisons and reformatories scattered throughout twelve states. Of the total number of cases thus investigated, it appeared that intemperance figured as one of the causes of crime in nearly 50%. It was, however, a first cause in only 31%. While, therefore, intemperance appears to contribute to crime in nearly half the cases investigated, a result strikingly confirmed by the Massachusetts Bureau of Labor Statistics for that state, it was almost always one only of several causes and appeared as a leading cause in less than a third, and as the sole cause in but 16%. The difference between the importance of liquor as a cause of crimes against property and of crimes against the person is surprisingly small. 51½% of the crimes against the person are attributed to liquor; in the case of crimes against property, the percentage is 49½%.

CHAPTER III.

A FEW FACTS BEARING ON THE QUESTION OF
FURTHER REGULATION OR RESTRICTION.

No effort is made here to give the important subject of the regulation of liquor traffic adequate treatment. A few quotations are given which it is believed will be found to suggest some of the difficulties to be expected in dealing with the problem and which point out some mistakes to be avoided.

“The evils of excessive drinking are well recognized, and yet the saloon seems to flourish in spite of these evils. The reports which have been made from several large cities, especially Chicago, New York, Boston, and San Francisco, concur in showing that the saloon though supplying the means of intemperance is not exclusively devoted to this purpose. Its character differs naturally with the locality in which it is situated, and with the nationality and occupation of its patrons, but it generally attracts custom by ministering to the social wants of the poor man. Here he finds companionship, recreation, literature, even kindness and help in trouble.

“The fact that the saloon is more than a mere drinking place and that it supplies many legitimate wants besides the craving for intoxicants should be frankly recognized and ought to be of help to those who are engaged in practical efforts to counteract the evils of intemperance.”

“The large interests represented by the capital invested in the production and sale of liquors and the large number of persons who gain their livelihood in connection with it do not necessarily represent a force working for the permanence of the traffic. They certainly indicate, however, some measure of the

resistance to be encountered in any effort to abolish or restrict the use of liquor, and they explain the success with which radical reformatory measures are often thwarted. Yet these figures, formidable as they are, are not altogether discouraging. The largest interests are represented by the least alcoholic beverages. In 1900, the manufacture of malt liquors gave employment to 46,685 persons and yielded a product of \$237,269,713. The manufacture of distilled liquors employed 4,383 persons and yielded a product of \$96,798,443."

"There are very powerful economic forces which almost compel moderation in modern industry. It does not seem too optimistic to say that a complete change has taken place in the habits of the wage-earning class since the days in the early part of the century when men went on strike for the sake of getting their rations of rum.

"This change has been furthered by two agencies: the self-interest of the employed on the one hand and the self-interest of the employer on the other. The early labor organizations were almost always more or less associated with drink. But as the unions have become larger and wealthier they have been able to emancipate themselves from the public houses by having their own places of meeting, while the importance of keeping sober during strikes has impressed itself more and more upon them. The very magnitude of their financial operations necessitates the election of temperate men to the higher offices and the development of insurance benefits gives each member a direct interest in the sobriety of his fellows. No member of a union wants to feel that his contributions, laboriously saved from small earnings are to be used up for the support of a drunken fellow member.

"The employers on the other hand equally feel the importance of sobriety as a means of preventing accidents, of insuring good work and of securing responsibility. The report made by the department of labor on this subject reveals an agency which has hitherto been little noticed."

Chapter VI of the twelfth annual report of the bureau of labor is devoted to a consideration of the experience and practice of employers relative to the use of intoxicants. The object of the investigation was: "To acquire a knowledge of the lines of industry, establishments and occupations, in which those indulging in intoxicating liquors are not employed, and the reason for such non-employment; the extent of the use of liquors by employes subject to night work, overwork, exposure, irregularity of hours of labor; the relation between pay days, holidays and Sundays and over-indulgence in intoxicants."

A great majority of the employers in engaging new men took steps to ascertain what their habits as to the use of intoxicating liquors were. The occupation in which this was done to the greatest extent was transportation. In some establishments those addicted to intoxicants were not employed. The reasons most often assigned for looking into the habits of employes in this regard were "to guard against accidents" and "because of responsibility of position." It does not appear from the reports of the department that laborers subject to night-work and over-work were to any appreciable extent more addicted to intoxicants than the ordinary laborers. Considerably over one-half of the establishments reported greater indulgence in intoxicants immediately after pay day than at other times.

Table IX is reproduced from the report and shows the opinions of employers as to the most effective way to lessen the consumption of intoxicating liquors among the people. 1103 suggested prohibition; 769 considered that the refusal to employ drinking men the most effective; 445 advocated high license; 180 suggested education, and 1,132 suggested other means.

The returns thus tabulated afford opportunity for various conclusions. Most obviously it appears that the recognition of the evils of the use and abuse of intoxicants is quite general. It is equally clear that by far the largest number of those who agree on any one method of doing away with this menace, advocate prohibition. On the other hand when we compare the total number of those who favor prohibition with the grand total of those advocating means of reform, we see that less than one-fourth agree on prohibition—the most vast majority favor

other means. It is perhaps too early to say with any degree of assurance that such would be their final verdict. It is clear however that prohibition has been sustained by an earnest, even zealous, propaganda which none of the other schemes have had and this may explain its greater hold on the public favor. At present it would appear that it is not the form of regulation which the majority of the people are ready to accept.

"As more things are done by machinery, as trolley-cars supplant horse-cars, as implements of greater precision and refinement take the place of cruder ones, as the speed at which machinery is run is increased, as the intensity with which people work becomes greater, the necessity of having a clear head during the hours of labor becomes imperative and the very conditions of modern business life necessitates sobriety on the part of the workers. Those who would find profitable employment realize more and more the importance of moderation in drink."

CHAPTER IV.

SUMMARY.

That over-indulgence in intoxicants constitutes a menace to social welfare has long been accepted by thinking people as a settled truth. For over a half-century organized effort has been on foot to curtail the use of alcoholic stimulants with a view to its ultimate discontinuance. In presidential, state and municipal campaigns appeal has been made to the voting population to return legislators and executives who would see to it that alcoholism be wiped out. As a matter of national policy the movement has made but little headway; here and there at different times a number of states have enacted prohibitory legislation, but in none of them has prohibition been more than a qualified success. The experience of municipalities and other local units has been as varied as local conditions.

In the meantime the per capita consumption of alcoholic liquors has risen from 4.17 gallons in 1840 to 19.99 gallons in 1903. The increase has been mainly the result of the enormous growth in the consumption of malt liquors which rose from 1.36 gallons per capita in 1840 to 18.04 in 1903. The per capita consumption of distilled spirits was 2.52 gallons in 1840 and 1.46 gallons in 1903. It has been said that the change has been favorable. That while there has been an enormous increase in the per capita consumption it has been entirely in the use of the less intoxicating liquor and that on the whole less alcohol is now consumed than in 1840. This may be doubted. The decrease of 1.06 gallons in the per capita consumption of distilled spirits is more than offset by the per capita increase of 16.68 gallons in the consumption of malt liquors. The

amount of alcohol consumed, in fact, may fairly be said to have doubled by the exchange.

Side by side with the increase in consumption has gone the development of the financial and economic forces engaged in the production and distribution of liquors. Regarding the manufacture and sale as a unit the capitalization of the industry aggregates a billion and a half of dollars. It gives employment to approximately five hundred thousand people, and, assigning to each of them a family of four, furnishes support to two million citizens of the republic; without considering those who are engaged in the production and transportation of the products that go into its composition and those employed in transporting the manufactured article. Not only has the traffic become strongly entrenched on the purely industrial side but the financial integrity of the government itself has in a measure become bound up in its permanence. Nation, state, county and municipality, derive a large and an increasing proportion of their support from taxes imposed on the manufacture and sale of liquor. At the present time about fifteen per cent of the total revenues derived by all the units is paid by this industry. We find another consideration that makes most strongly for the permanence of the traffic in liquors. The saloon has become the center from which, more than from any other single institution, radiates the social life of the American workingman. These are considerations that must be borne in mind by those who are impatient to be rid of the institution and would root it out at a moment's notice.

According to the report of the Massachusetts Bureau of Labor 39.44 per cent of the paupers in the institutions of that state became such through the use of intoxicants. Two-thirds of the convictions for crime were convictions for drunkenness. Alcoholism led to 84 per cent of the whole number of convictions, and about 51 per cent of the total number of convictions for crime other than drunkenness. The Committee of Fifty estimates that 25 per cent of the poverty relieved by charity organization societies results from liquor, and 37 per cent of the pauperism found in institutions is due to that cause. 50 per cent of the crime is due in part to intemperance; while 16 per cent has that as its

sole cause. In the great majority of cases liquor is partly responsible for crime. But the pauperism which comes within the purview of charity organization work or finds its way into almshouses represents but the smallest part of the misery and economic waste properly attributable to the use of liquor. The time needlessly wasted, the vast economic resources diverted from their legitimate channels, must all be taken into consideration in attempting to cast up the damage which alcohol works to society.

Statistics, common observation and the history of political parties all seem to emphasize that prohibitory legislation is not suited to the present temper of the American people. The best thought of the time is beginning to unite in the belief that the solution of the liquor problem does not lie in high license or prohibition or a governmental dispensary. The liquor industry is rooted in a social need. Patient study and thoughtful endeavor must devise some means which will more effectively satisfy the want which the saloon at present supplies.

TABLE I.—*Distilleries in operation and breweries and production of distilled spirits, fermented liquors, and domestic wines, 1880-1903.*

Year Ending	Distilleries in Operation.		Breweries.		Domestic wines. Gallons.
	Number.	Production.	Number.	Production.	
		Gallons.		Barrels.	
June 30, 1880	4,661	91,374,417	2,741	13,347,111	23,453,827
June 30, 1881	5,210	119,328,011	2,474	14,311,028	49,000,000
June 30, 1882	5,022	107,283,215	2,371	16,952,085	19,999,986
June 30, 1883	5,129	75,294,510	2,378	17,757,892	17,487,000
June 30, 1884	4,738	76,531,167	2,240	18,998,619	17,500,000
June 30, 1885	5,172	76,405,074	2,230	19,185,953	17,503,000
June 30, 1886	6,031	8,849,260	2,232	20,710,933	21,003,000
June 30, 1887	4,905	79,433,446	2,269	23,121,526	28,000,000
June 30, 1888	3,646	71,688,188	1,968	24,680,219	31,999,994
June 30, 1889	4,349	91,133,550	2,144	25,119,853	30,000,000
June 30, 1890	6,211	111,101,738	2,156	27,561,914	24,306,905
June 30, 1891	3,819	117,797,101	2,138	30,497,209	24,306,906
June 30, 1892	5,925	118,436,566	1,967	31,856,626	23,725,418
June 30, 1893	4,743	131,010,330	1,930	34,591,179	27,126,500
June 30, 1894	5,148	92,153,651	1,805	33,362,373	18,875,728
June 30, 1895	2,429	81,909,771	1,771	33,589,784	17,748,360
June 30, 1896	6,187	89,992,555	1,866	35,859,250	15,980,000
June 30, 1897	3,158	64,279,075	1,830	31,462,821	35,380,076
June 30, 1898	3,558	83,668,411	1,847	37,526,117	19,105,803
June 30, 1899	3,917	100,162,334	1,959	36,697,137	24,366,584
June 30, 1900	3,614	109,245,187	1,816	39,471,538	27,930,912
June 30, 1901	3,745	128,568,201	1,771	40,614,260	25,150,000
June 30, 1902	2,938	132,843,802	1,807	44,550,127	45,700,000
June 30, 1903	2,441	148,206,875	1,733	46,720,179	32,680,145

¹ Includes domestic wines imported after exportation.

TABLE II.—*Alcoholic liquors: Summary 1900, 12th census, p. 597.*

	Total.	Liquors, malt.	Liquors, distilled.	Liquors, vinous.
Number of establishments.....	2,835	1,509	967	359
Capital.....	\$457,674,087	\$415,284,468	\$32,551,604	\$9,838,015
Salaried officials, clerks.....	8,153	7,153	661	344
Salaries.....	\$14,301,644	\$13,046,540	\$889,606	\$365,498
Wage earners, original number....	44,417	39,532	3,722	1,163
Total wages.....	\$28,005,484	\$25,826,211	\$1,733,218	\$446,055
Wages	43,107	38,385	3,623	1,099
Men, 16 years and over.....	\$27,726,021	\$25,573,612	\$1,715,552	\$436,837
Women, 16 years and over.....	646	504	81	61
Wages.....	\$156,850	\$132,614	\$15,428	\$8,808
Children, under 16.....	664	643	18	3
Wages.....	\$122,613	\$119,985	\$2,238	\$390
Miscellaneous expenses.....	\$183,099,796	\$109,329,231	\$73,218,227	\$552,338
Cost of materials used.....	\$70,512,042	\$51,674,928	\$15,147,784	\$3,689,339
Value of products.....	\$340,615,466	\$237,269,713	\$96,798,443	\$6,547,310

TABLE III.—*Alcoholic liquors: Comparative summary 1880, 1890, 1900 census reports.*

Year.	Estab- lishments reported.	Capital.	Average employees.	Total wages	Cost of mat-ri-als.	Value of products.
1880....	3,152	\$118,037,729	33,689	\$15,078,579	\$85,921,374	\$144,291,241
1890....	1,924	169,270,219	41,425	31,678,166	80,230,532	289,775,639
1900....	2,835	457,674,087	52,575	42,307,128	73,512,012	340,615,466

TABLE IV.—*Manufacture of malt.*

Items	1880.	1890.	1900.
Number of establishments reporting.....	216	202	146
Capital.....	\$14,390,441	\$24,293,864	\$39,288,102
Average number of employees.....	2,332	3,694	2,280
Total wages.....	\$1,004,548	\$2,103,200	\$1,653,829
Cost of materials.....	\$14,321,423	\$17,100,074	\$14,816,741
Value of products.....	\$18,273,102	\$23,442,559	\$19,373,600

TABLE V.—Materials used for the production of distilled spirits.

Years.	Malt.	Wheat.	Barley.	Rye.	Corn.	Oats.	Mill feed.	Molasses.	Other materials.	Grain used.
	Bu.	Bu.	Bu.	Bu.	Bu.	Bu.	Bu.	Gal.	Bu.	Bu.
1880.	1,830,562	5,103	19,892	3,623,055	17,649,269	140,982	526,362	3,110,190	211,134	24,006,359
1881.	2,455,184	180,886	124,095	4,630,800	23,109,114	177,855	612,736	2,710,307	505	31,291,175
1882.	2,192,719	301,241	50,675	4,228,649	20,051,239	168,488	452,330	2,121,804	13,754	27,459,095
1883.	1,478,971	291,368	73,380	2,987,473	13,428,469	122,583	240,340	2,373,106	22,203	18,644,787
1884.	1,633,914	114,475	199,656	2,867,603	13,746,505	124,165	241,073	2,259,536	591	18,927,982
1885.	1,638,578	130,721	17,855	2,733,397	13,040,357	80,552	223,558	2,719,416	185	17,865,203
1886.	1,823,758	55,179	19,891	3,285,959	13,821,193	58,652	130,700	2,308,130	.....	19,195,332
1887.	1,825,627	45,361	16,110	3,062,947	12,870,255	44,886	93,060	2,428,783	1,319	17,959,565
1888.	1,602,586	87,277	24,707	2,410,381	11,887,027	44,232	66,254	2,519,494	45	16,122,509
1889.	2,242,214	48,279	21,589	3,259,917	15,319,862	23,632	73,589	1,951,104	1,842	20,990,924
1890.	2,756,385	20,310	965	4,542,845	17,806,612	32,690	41,840	2,198,538	1,254	25,202,901
1891.	2,951,547	96,166	662	4,579,838	18,671,536	14,637	28,389	2,610,918	4,856	26,347,641
1892.	3,129,123	74,801	14,412	4,321,168	18,909,462	10,701	17,665	3,049,771	12,495	26,489,827
1893.	3,272,899	97,070	5,958	5,521,202	19,770,559	13,516	17,343	4,884,577	3,823	29,030,409
1894.	2,286,188	100,778	2,993	3,268,637	13,571,441	21,126	6,731	5,476,521	11,213	19,716,818
1895.	2,068,575	189,173	886	3,738,703	11,472,052	22,098	3,925	5,802,811	4,299	18,057,107
1896.	2,103,602	49,090	1,748	2,955,833	13,497,689	16,313	2,420	5,398,965	3,923	18,630,618
1897.	1,408,740	8,800	1,710	1,658,101	10,032,411	10,680	2,528	6,153,342	8,921	13,131,891
1898.	1,941,579	14,451	4,212	2,712,290	12,563,442	12,954	1,555	4,365,495	9,763	17,260,246
1899.	2,471,417	19,182	1,518	3,383,867	15,682,809	14,805	1,350	2,920,660	5,520	21,580,468
1900.	2,721,124	27,225	1,328	4,070,861	16,277,034	15,414	611	2,906,645	665	23,114,262
1901.	3,274,212	24,172	1,476	5,085,766	18,867,088	21,114	4,319	3,165,390	700	27,278,847
1902.	3,361,107	29,391	2,542	5,584,659	18,473,850	33,775	1,678	12,485,276	349	27,487,351
1903.	3,754,085	32,197	3,378	5,873,226	20,597,594	31,235	1,924	15,544,330	2,910	30,296,549

THE LIQUOR TRAFFIC IN WISCONSIN.

TABLE VI.—Liquors, malt; materials and products, 1900.

	Unit of measure.	Quantity.	Cost of materials.	Value of products
Materials:				
Total			\$51,674,928	
Malt	Bushels.	36,385,365	\$20,539,208	
Corn, partially manuf'd.	Pounds.	483,998,484	4,805,887	
Barley	Bushels.	11,232,599	5,554,669	
Hops	Pounds.	37,465,811	5,858,265	
Fuel, and rent of power and heat			4,742,998	
Mill supplies			599,479	
All other materials			8,742,771	
Freight			831,551	
Products:				
Total				\$237,269,713
Beer, ale and porter	Bbl. of 31 gal.	38,664,584		\$234,275,259
All other products				2,994,454

TABLE VII.—Consumption of wines and liquors.

YEARS.	WINES.		MALT LIQUORS.		DISTILLED SPIRITS.		Total consumption of wines and liquors.	Consumption per capita of all liquors.
	Con- sumption (gallons).	Per cap.	Con- sumption (gallons).	Per cap.	Con- sumption (gallons.)	Per cap.		
1840 ..	4,873,096	.29	23,310,843	1.36	43,060,884	2.52	71,244,823	4.17
1850	6,315,871	.27	36,563,009	1.58	51,833,473	2.23	94,712,353	4.08
1860	11,059,141	.35	101,346,669	3.22	89,968,651	2.86	202,374,461	6.44
1870	12,225,037	.32	204,756,156	5.31	79,895,708	2.07	296,876,931	7.07
1880	28,329,541	.56	414,220,165	8.26	63,526,694	1.27	506,076,400	10.09
1890	28,956,981	.46	855,792,335	13.67	87,829,562	1.40	972,578,878	15.53
1891	29,033,792	.45	977,479,761	15.31	91,157,565	1.43	1,097,671,118	17.19
1892	28,467,860	.44	987,496,223	15.17	98,328,118	1.51	1,114,292,201	17.12
1893	31,987,819	.48	1,074,546,336	16.20	101,197,753	1.52	1,207,731,908	18.20
1894	21,293,124	.31	1,036,319,222	15.32	90,541,209	1.34	1,148,153,555	16.97
1895	19,644,049	.28	1,043,292,106	15.13	77,828,561	1.13	1,140,764,716	16.54
1896	18,701,406	.26	1,080,626,165	15.38	71,051,877	1.01	1,170,379,448	16.66
1897	38,588,307	.53	1,069,310,262	14.94	73,166,843	1.02	1,81,065,402	16.50
1898	20,567,317	.28	1,164,226,462	15.96	81,487,587	1.12	1,266,281,366	17.36
1899	26,360,696	.35	1,135,520,629	15.28	87,310,228	1.17	1,249,191,553	16.80
1900	30,427,491	.40	1,221,500,160	16.01	97,248,382	1.27	1,349,176,053	17.68
1901	28,791,149	.37	1,258,249,391	16.20	103,086,839	1.33	1,390,127,319	17.90
1902	49,754,403	.63	1,381,875,437	17.49	107,452,151	1.36	1,539,081,991	19.48
1903	39,413,201	.49	1,419,879,952	18.04	117,252,148	1.46	1,606,545,301	19.99

Statistical abstract.

TABLE VIII.—*Recapitulation: Total annual revenue from liquor manufacture and traffic, 1896.*

*Tax on real and personal property employed in manufacture.....	\$1,225,805 85
*Tax on real and personal property employed in traffic.....	10,075,120 00
Ad valorem tax in Kentucky and Missouri.....	32,115 70
United States internal revenue tax.....	114,450,801 77
License fees or special taxes, states.....	10,399,015 60
License fees or special taxes, counties.....	5,011,225 06
License fees or special taxes, municipalities.....	34,155,299 25
Fines, states.....	91,299 56
Fines, counties.....	378,557 75
Fines, municipalities.....	5-3,916 01
*Fines, sales of confiscated liquors, etc.....	123,844 96
Customs duties on imported liquors.....	6,756,063 00
Total.....	\$183,213,124 51
United States internal revenue tax (1903).....	179,401,328 47

* Estimated.

TABLE IX.—*Establishments suggesting means to lessen the consumption of intoxicating liquors among the people.*

Means suggested.	Establishments Suggesting Means.					
	Agricul- ture.	Manu- factures.	Mining and quarrying.	Trade.	Trans- porta- tion.	Total.
Prohibition.....	207	481	295	49	71	1,103
Do not employ drink'g men.....	64	407	106	49	143	769
High license.....	41	269	69	30	36	445
Education.....	9	102	27	19	23	180
Abolish saloons.....	28	99	21	2	9	159
Education, moral and re- ligious.....	13	81	13	18	11	136
Improve social conditions.....	18	53	33	4	17	125
Government control.....	33	60	15	9	3	120
Enforce existing laws.....	16	72	21	4	1	114
Limit number of saloons ..	1	75	4	.....	5	85
Remove all restrictions.....	17	28	16	10	4	75
Encourage use of light wines and beers.....	11	41	3	13	4	72
High license and do not employ drinking men.....	8	28	7	10	10	63
Local option.....	14	31	12	5	1	63
High revenue tax.....	12	25	13	2	5	57
Prohibit treating.....	3	28	14	6	5	56
Example of employers.....	2	27	11	3	11	51
Close saloons Sunday and early week days.....	5	38	6	2	2	53
Make drunkenness a pun- ishable misdemeanor.....	5	27	12	8	1	53
All other means suggested.....	146	578	188	97	123	1,132
Total.....	653	2,550	886	340	485	4,914

FEDERAL GOVERNMENT STATISTICS OF LIQUOR MANUFACTURE AND TRAFFIC IN WISCONSIN.

The census reports two establishments in Wisconsin engaged in the manufacture of vinous liquors but no further facts with reference to them are given. As to malt liquors the census reports show (see Table X) that in 1890 there were 107 establishments with a capital of \$16,803,323, supporting 306 salaried officials to whom was paid the sum of \$407,271. The wage-earners numbered 2,859 and received \$1,457,308 in wages. The miscellaneous expenses were \$3,806,846, the cost of materials used \$4,829,390 and the value of the product \$14,193,057. In 1900 the establishments had increased to 147, the capital to \$35,317,950, the salaried officials to 484 and the salaries paid to \$726,069. There were 3,904 wage earners and they received \$1,926,730. The miscellaneous expenses underwent the enormous increase to \$10,259,291 while the cost of materials declined to \$4,237,454. This apparent exception to the general increase as elsewhere explained is due to the fact that many items listed under cost of materials in 1890 were classified as miscellaneous expenses in 1900. The value of the product in 1900 was \$19,394,709.

TABLE X.—*Alcoholic liquors: Summary for Wisconsin, census 1900*

	No. of estab- lishments.	Capital.	Salaried Officials.		Wage Earners.		Miscel- laneous expenses.	Cost of mater- ials used.	Value of products.
			No.	Salaries.	Average No.	Total wages.			
1890. Malt liquors Distilled liquors	107 Not given.	\$16,830,223	306	\$407,271	2,859	\$1,457,308	\$3,806,846	\$4,829,390	\$14,193,057
1900. Malt liquors Distilled liquors ...	147 5	\$35,317,950 773,890	484 11	\$726,069 11,000	3,904 53	1,926,730 29,979	10,259,291 2,280,404	4,237,454 342,296	19,394,709 2,698,984
Total	152	\$36,091,840	495	\$737,069	3,957	\$1,956,709	\$12,539,695	\$4,579,750	\$22,093,693

LABOR.

In 1900 five establishments with a capital of \$773,890 were engaged in the manufacture of distilled liquors; they employed 11 salaried officials paying them \$11,000 and 53 wage-earners to whom was paid the sum of \$29,979. The miscellaneous expenses of these establishments were \$2,280,404. They used materials costing \$342,296 and the value of their product was \$2,698,984.

The totals for malt liquors and distilled spirits combined in 1900 were as follows: Establishments, 152; capital \$36,091,840; salaried officials, 495; salaries, \$737,069; wage-earners, 3,957; total wages, \$1,956,709; miscellaneous expenses, \$12,539,695; the cost of materials was \$4,579,750; while the aggregate value of the product was \$22,093,693.

Table XI shows the production, amount of tax paid and per cent of total tax paid in the United States for distilled spirits and fermented liquors in Wisconsin from 1890 to 1903. It will be seen that the production of distilled spirits increased from 527,678 gallons in 1890 to 2,216,341 gallons in 1903. The production of fermented liquors, increased from 2,067,961 barrels in 1890 to 3,886,496 in 1903. It will be noted that the production of distilled spirits increased uniformly with the single exception of the year 1897 when there was a falling off from the output of the previous year. The production of fermented liquors was not as uniform from year to year while on the whole there was an increase it was by no means as constant or decided as in the case of distilled spirits. The amount of tax paid on distilled spirits in 1903 was \$2,565,864.35; that paid on fermented liquors was \$3,902,201.96. The amount of tax paid was, of course, governed by the rate in force each year, and during the years when the war revenue act was in force the amount of tax paid was in excess of what it would otherwise have been.

The column of percentages shows that Wisconsin paid 1.9444% of the total tax paid on distilled spirits in the United States. Approximately 2% of the country's output of dis-

tilled spirits is produced by Wisconsin. From the column for fermented liquors it appears that 8.2066% of such liquors is produced in the state of Wisconsin.

Table XII taken from the Twelfth Annual Report of the Commissioner of Labor reveals some interesting information regarding the practice of employes in cashing their pay-checks. The figures and percentages may be taken as fairly indicative of the relative influence of the saloon among the various nationalities. It appears that 100% of the Hungarians and Poles reported as cashing pay checks, cash their checks at saloons; 64% of the Germans and 35% of the English, Americans, Scotch and Irish.

The Twelfth Annual Report of the Federal Labor Bureau presents an estimate of the total revenue derived from liquor manufacture and traffic in Wisconsin for the year ending June 30, 1906, by national, state, and local governments. The results of these estimates are given in Table XIII. The total amounts received for licenses by county governments is put at \$3,950, and by towns, cities and villages at \$1,431,697.89, making a total receipt for all local liquor license of \$1,435,647.89. Fines for violations of laws for the regulation of the liquor traffic brought the state and local governments a total revenue of \$9,399.35. The total revenue of state and local governments from the liquor traffic was, therefore, \$1,445,047, of which amount about 99% was received for saloon licenses in cities, villages and towns. To this amount may be added \$4,418,767, the amount paid the federal government in the form of excise taxes on alcoholic liquors manufactured in this state, giving a total of the government revenue from the manufacture and sale of intoxicants and not including taxes on property, in the state of Wisconsin of \$5,863,814.

The facts presented in table XIV are also taken from the Twelfth Annual Report of the United States Labor Department. They represent the totals of the returns from 2,511 Wisconsin establishments engaged in liquor traffic and from which the department was able to obtain replies for its special

investigation. While these figures do not cover probably one-half of the liquor traffic in the state, they are, nevertheless, valuable as the basis for certain averages and proportions which may be applied to the complete number of establishments. It may safely be assumed that any average which is representative for over 2,500 of the establishments in the state would be approximately correct for all.

Of the total number of establishments reporting to the United States Labor Department 2,079 were retail only, and 2,428 were principally retail, and 67 more were retail and wholesale. Only 16 or about 65/100 of 1% were wholesale establishments. The average size of these establishments in point of capital, number of proprietors and employes, etc., is probably not above the average of all establishments in the state, but rather below it if anything.

The total capital owned by the 2,511 establishments was \$4,556,292, of which \$2,680,648 was in real estate, \$419,727 in fixtures and \$1,455,917 in sundries. The total rented capital of the 2,511 establishments was reported as \$5,091,074, of which \$4,864,281 was real estate and \$226,793 fixtures. The total capital employed, both owned and rented, was \$9,647,366, of which \$7,544,929 or 78.2% was invested in real estate, \$646,520 or 6.7% in fixtures and \$1,455,917 or 15.1% in sundries. Of all the real estate employed 35.6% was owned, of the fixtures 65% and of the sundries 100%.

The average total amount of property employed, either owned or rented, per establishment was about \$3,840; the average amount in real estate about \$3,010, in fixtures about \$250, and in sundries about \$580.

The total annual taxes on property paid by the 2,511 establishments reporting was \$170,485; \$144,622 on real estate, and \$25,863 on personal property. The average property tax paid annually per establishment was therefore about \$68.

The total annual rental paid on rented property was \$483,565, principally on real estate. The average annual rental per establishment amounted to about \$192.50.

The total number of proprietors and firm members for 2,511 establishments was 2,735 or an average of 1.09 persons

per establishment. The total average number of employes required by the 2,511 establishments was 2,165 or an average of .86 persons per establishment. The total average number of persons both proprietors and employes engaged in the liquor traffic was therefore 1.95 per establishment. According to the returns the number of persons actually employed was over 32 per cent in excess of the number of persons reported as required. But it would appear that the former figure is the more significant as it is based on actualities whereas the number required is probably largely based on estimates.

TABLE XI.—*Product and taxation for Wisconsin and per cent. of total produced in U. S.*

	Distilled Spirits.			Fermented Liquors.		
	Production, gallons.		Tax paid.	Production, barrels.		Tax paid.
	Per cent.			Per cent.		
1890.....	* .8166	527,678	\$667,021.17	* 7.4617	2,067,961	\$1,940,689.98
1891.....	.7170	528,316	597,534.44	8.0785	2,477,834	2,307,649.66
1892.....	.7323	539,474	668,692.77	8.1570	2,631,783	2,450,148.62
1893.....	.7736	669,410	732,758.87	8.6518	3,019,022	2,816,077.64
1894.....	1.3834	1,230,578	1,179,461.92	8.6333	2,908,461	2,712,140.01
1895.....	1.8010	1,352,223	1,438,306.89	8.3097	2,807,001	2,629,246.01
1896.....	2.1756	1,477,096	1,755,021.58	7.8846	2,854,334	2,663,745.51
1897.....	1.8539	1,239,283	1,520,365.52	7.6938	2,673,948	2,498,341.03
1898.....	1.8365	1,498,688	1,699,579.23	7.5972	2,886,502	3,002,079.86
1899.....	2.4494	1,904,401	2,431,867.52	7.6059	2,846,233	5,221,022.07
1900.....	2.4091	2,218,147	2,646,848.87	7.9988	3,205,265	5,881,748.50
1901.....	2.5199	2,426,613	2,923,838.10	7.9002	3,240,714	5,978,076.53
1902.....	2.3063	2,349,027	2,793,680.71	8.2313	3,705,046	5,924,814.63
1903.....	1.9444	2,216,341	2,565,864.35	8.2066	3,886,496	3,900,372.11

* Per cent. of total raised by taxation in U. S.

TABLE XII.—*Per cent. of employes cashing pay-checks at groceries, saloons, etc.*

	Saloons.	Groceries.	Savings banks.	Total.
Savings banks, etc., by nationalities Milwaukee				
Hungarians and Poles ..	100	.....	.....	100
Germans	64	36	.....	100
English and Americans..	35	65	.....	100
Scotch and Irish	35	65	.....	100
Total	58.5	41.5	.....	100

TABLE XIII.

	State.	County.	Municipal.	Total.
License fees or special taxes		\$3,950 00	\$1,431,697 89	\$1,435,647 89
Fines collected	\$3,620 84	338 22	5,440 29	9,399 35
Total revenue collected				\$1,445,047 24
Federal tax on manufacture				4,418,767 09
Total state, county, municipal and federal govern't				\$5,863,814 33

TABLE XIV.—Summary of capital invested, taxes and rent paid, and persons in Wisconsin engaged in each class of liquor traffic, 1896.

	No. establishments.	CAPITAL.						
		Owned.				Rented.		
		Real estate.	Fixtures.	Sundries.	Total.	Real estate.	Fixtures.	Total.
Retail only	2,079	\$1,931,161	\$294,982	\$478,386	\$2,704,529	\$3,984,955	\$180,070	\$4,165,025
Retail and other	349	458,194	77,420	94,438	630,052	522,376	45,023	567,399
Wholesale only	13	72,500	6,150	233,775	312,425	41,500	.....	41,500
Wholesale and other	3	2,200	125	11,500	13,825	10,200	.....	10,200
Retail and wholesale	64	215,043	40,890	635,768	891,701	303,850	1,700	305,550
Retail, wholesale, etc.	3	1,550	160	2,050	3,760	1,400	.....	1,400
Total	2,511	\$2,680,648	\$419,727	\$1,455,917	\$4,556,292	\$4,864,281	\$226,793	\$5,091,074

TABLE XIV.—Continued.

Aggregate Capital.	Yearly Taxes.			Rent paid during the year.	Proprietors and firm members.			Average Employes During Year.					
	Real estate.	Personal property.	Total.		Males.	Fe-males.	Total.	Number actually empl'd.			Number required.		
								Males.	Fe-males.	Total.	Males.	Fe-males.	Total.
\$6,869,554	\$113,208	\$11,712	\$124,920	\$402,408	2,123	76	2,199	964	445	1,409	934	156	1,090
1,197,451	18,515	2,477	20,992	49,804	393	10	403	325	108	433	182	47	229
353,925	2,303	2,696	4,999	4,945	24	.....	24	68	.....	68	68	.....	68
24,025	273	209	482	1,000	8	.....	8	5	.....	5	4	.....	4
1,197,251	10,278	8,733	19,011	25,252	95	2	97	242	4	246	241	4	245
5,160	45	36	81	156	4	.....	4	4	.....	4	3	.....	3
\$9,647,366	\$144,622	\$25,863	\$170,485	\$483,565	2,647	88	2,735	1,608	557	2,165	1,432	207	1,639

The totals given here are only for the establishments in Wisconsin from which reports were secured by the Federal Labor Bureau.

LAW AUTHORIZING PRESENT INVESTIGATION.

Chapter 418—Laws of 1903.

AN ACT to provide for the collection and publication of statistics relating to the sale of alcoholic liquors.

The people of the state of Wisconsin, represented in senate and assembly, do enact as follows:

Statistics of sale and consumption of alcoholic liquors.

SECTION 1. The commissioner of labor and industrial statistics is hereby authorized and required to collect and publish all available facts concerning the manufacture, sale and consumption of spirituous, malt, vinous, or intoxicating liquors used as beverages in the state of Wisconsin.

Penalty. SECTION 2. The refusal of any dealer or manufacturer or employe of any dealer or manufacturer of said liquors to answer the questions, required by said commissioner under section one (1) of this act, shall be considered a misdemeanor, and said dealer or employe shall upon conviction thereof be fined not less than twenty-five (25) dollars nor more than one hundred (100) dollars, or imprisonment in the county jail not less than thirty days, nor more than sixty days.

SECTION 3. This act shall take effect and be in force from and after its passage and publication.

Approved May 22, 1903.

SUMMARY OF STATUTES RELATIVE TO THE GRANTING OF LIQUOR LICENSES IN WISCONSIN.

Each town board, village board and common council may grant licenses, subject to certain conditions, to such persons as they deem proper for the purpose of selling spirituous and malt liquors in their respective towns, villages or cities, on the condition that they file with the clerk of the town, village or city a bond for \$500, with at least two sureties, conditioned on the faithful observance of law. The sum to be paid for such license shall be (subject to the right of increase as provided by law) in towns having within their boundaries no city or village, incorporated or unincorporated, with a population of five hundred or more, one hundred dollars, and in all cities and villages and other towns, two hundred dollars, except for registered pharmacists, who may be licensed to sell spirituous liquors in amounts less than one gallon for medicinal, mechanical or scientific purposes, and not to be drunk on the premises, on the payment of ten dollars for such permit. In case no such permit is granted, the pharmacist may sell such liquor only on the prescription of a physician. The pharmacist to whom a permit has been issued must maintain a record of the date, kind and quantity of liquor sold and the person to whom sold and this record must be open for inspection by the board or council which granted the permit.

Special elections may be held in cities, villages and towns for the purpose of determining the amount to be paid for licenses for the sale of liquors to be drunk on the premises. For this purpose, the clerk on a request in writing signed by twelve electors of the city, village or town, shall give notice of such special election. Such elections, which are subject to the rules pertaining to general elections as nearly as practicable, must be held on the third Tuesday of September; no other question can be submitted to the electors at the same time; and no such elections can be held oftener than once in three years.

At such special elections in towns where the sum to be paid for license is fixed at one hundred dollars the electors may increase such sum to either two hundred and fifty dollars or four hundred dollars; and in all cities, villages and towns wherein the sum to be paid for licenses is fixed at two hundred dollars they may increase such sum to either three hundred and fifty dollars or five hundred dollars. The ballots have printed upon them each of the sums which may be voted for, that is, either of the several sums of one hundred dollars, two hundred and fifty dollars, or four hundred dollars, in the class of towns first named, and either of the sums of two hundred dollars, three hundred and fifty dollars or five hundred dollars in all cities, villages and other towns. The sum receiving the highest number of votes at such election is the sum to be paid for licenses until changed by another election. If the highest amount voted for on the ballot does not receive a plurality of the votes cast, then the votes cast for such amount are considered as having been cast for the next lower amount and are so counted, in case of a tie vote upon the lowest and highest amount voted for, and there are no votes cast for the medium sum, such medium sum is considered the sum to be paid for licenses. These provisions are not to be construed to diminish the sum to be paid for such license in any city or village as fixed in the charter or ordinances thereof.

Whenever a number of electors in any city, town or village equal to ten per cent, or more than ten per cent of the total number of votes therein cast for the governor at the last general election, present to the clerk thereof a written petition signed by them asking to have submitted the question whether or not licenses shall be granted for the sale of spirituous or malt liquors to be drunk on the premises, the clerk shall make an order to have that question submitted to the electors, the election to take place on the first Tuesday of April, following the date of the order. These elections are held and the returns canvassed in the same manner as other elections are conducted. If a majority of the ballots cast at such election are against licenses it becomes unlawful to deal in liquors in such city, town or village, and any license granted for the sale of liquors while

the result of that vote remains unreversed is void; but if the majority of the votes are in favor of licenses, then the city, town or village may grant such licenses.

A method for the exclusion of saloons from territory seeking annexation to any city of the second, third or fourth class is furnished in a law which provides that when a petition for annexation is presented to the common council and praying that such territory be without license, no license shall be granted within that territory if annexed, until the question of license or no license shall have been first submitted to the electors of that territory at a special meeting conducted in the same manner as a ward election, and a majority of all votes cast on the question must be in favor of licenses in order to permit the council to grant any within that territory.

METHOD OF PRESENT INQUIRY.

The present inquiry into the liquor traffic in Wisconsin aims to take into consideration only a few of the leading facts with reference to the retail distribution of liquors. Among these are the application of the local option law, high and low rates of license, number and distribution of saloons with reference to the numbers and density of population, etc. While, under the law authorizing this investigation, it appears that the department is empowered to inquire into other phases of this intricate question, it was believed that the time which could be devoted to the present inquiry would be more profitably devoted and more practical results obtained through research along the lines above laid down. While the law aims to empower the bureau to compel information from persons engaged in the manufacture or traffic in spirituous liquors, it seemed unadvisable to pursue this course for the present inquiry, at least. More reliable information of a most important character was found to be far more readily obtainable from other sources than those designated in the law. As this information had not been hitherto collected and compiled, and as it would no doubt furnish abundant material for the consideration

which could be properly devoted to the subject at the present time, it was decided to narrow the lines of investigation somewhat within the limits suggested by the statute.

The information here collected and published for the first time, taken apart from the other matter which it is necessary to consider in connection, may be fitly described as a census of saloon licenses in Wisconsin. The source of the statistics of which this census is composed is almost wholly official and it is believed that the returns are, for the most part, quite reliable.

To obtain this information, short circular letters were prepared and sent with inquiry blanks to each of 1,428 town, city, and village clerks of the state. In order to secure complete and prompt returns, the blanks were worded so as to make the replies as brief and simple as possible. The questions asked were: 1st, the number of saloon licenses in force in the corporate limits of each corporation, in January, 1905; 2d, the rate of license; and 3d, if no licenses were in force, what was the reason for such condition. To most of these inquiries, prompt replies were received. In very many cases, however, it was necessary to send a second blank, and in several instances, even a third request for this information was necessary. In this manner, however, returns were obtained for all but about fourteen towns and four villages. Further efforts were made to complete the returns by similar inquiries sent to the nearest newspaper and to the county clerk of the county in which the delinquents were located. This effort met with only qualified success, netting, finally, returns for seven towns and two villages. Thus there remain unreported five towns and two villages, with a total population of 5,339. With the exception of these towns and villages and the Indian reservations, the statistics herein presented are complete for the entire population and area of the state.

The returns thus obtained were readily classified into three principal classes. One of these classes comprises the cities, villages, and towns granting license; one the cities, villages, and towns in which "No license" has been voted under the local option law, and the third, cities, villages, and towns having

no application for license. The first class is sharply defined and there is little room for error in this division, although mistakes of fact may appear in a few instances in the original returns. Between the remaining two classes, the line of demarcation was not always sharply drawn. In some instances it was indeed difficult to determine from the replies whether absence of license was because of a vote under local option laws, or merely because of no application for license. Moreover, it appeared from the replies that in several instances the lack of applications for license was due to a generally accepted belief that anti-saloon sentiment in the community was of such force as to make the business unprofitable, or to a settled public policy of electing a town board which would refuse to grant license on application. Thus it is seen that absence of saloon license is often due to forces of public sentiment expressed otherwise than through the local option law. In compilation of the returns, it has been endeavored to class the several cities, villages, and towns with as little error as possible. In all cases where it was impossible to determine between "No license" because of a local option vote and no license because of no application, the latter class was given the preference. In this way, the first two classes are fairly reliable and correct except for possible shortages in the second class. This defect, however, is met to a certain extent by a careful examination of both non-license classes with reference to the principal facts bearing upon the situation in each case as determined from other sources. Chief among these considerations are density of population, nearness of licensing cities, villages, or towns, and nearness of post-offices, railroad stations, villages, or centers of population not licensing.

The returns from the city, village, and town clerks reported the number of saloon licenses in force, January, 1905. The latest census of the state (when these returns were completed) was the federal census of 1900. During the intervening time there has been a very considerable increase in the population in some parts of the states. It is clear, therefore, that liberal allowances must be made in comparing the average population per license, in the several parts of the state, when this average

is based on the population of each given locality in the year 1900 and the number of licenses in force in 1904-5. Particularly in reference to localities in the northern counties must this caution be observed.

In an effort to arrive at the average population per square mile in the townships in the several classes and localities, the same difficulty is encountered. The average here arrived at is approximately the average population per square mile in 1900 rather than the average at the time when the given number of licenses were in force. For comparative purposes, these objections, fortunately, are of much less force as regards the Eastern, Southern and Southwestern counties of the state which represent a little over eighty per cent of the entire population of the state. With possibly here and there an exceptional instance, comparisons of these factors as between the localities above designated may be assumed to be reasonably representative.

The difference between the time of this inquiry and that of the last census of population then available leads also to another difficulty, namely the population of new towns, cities, and villages created since 1900, of which there are a considerable number. Possibly ten per cent of all towns have been created, divided, or readjusted with respect to their boundaries since 1900. In all such cases, it was found necessary to estimate or approximate the population. With only one or two exceptions, each of these various civil divisions cast a separate vote at the last general election. In order to have an estimate of the population in all such cases, the total population of the given territory, as enumerated in the last census, was prorated to the various civil divisions in proportion to the total number of votes polled by each at the last general election. Thus, by way of illustration:

Town A had, in 1900, 1,000 population.

Subsequently, town B was created by division of town A.

At the general election, 1904, town A cast 100 votes and town B, 100 votes.

The estimated population of the present territory of town A, in 1900, is 500.

The estimated population of the present territory of town B, in 1900, is 500.

Again:

Town A had, in 1900, 1,500 population.

Town B had, in 1900, 2,000 population.

Subsequently, village C was created out of the territory on the boundary of the two towns, A and B.

At the general election; 1904, town A cast 200 votes, town B, 300 votes, and village C, 200 votes.

The total population of the entire territory in 1900 was 3,500, the total vote cast in 1904, 700.

The proportions, therefore, stand as follows:

Pop. (est.) town A : 3,500 :: 200 : 700 = 1,000.

Pop. (est.) town B : 3,500 :: 300 : 700 = 1,500.

Pop. (est.) village C : 3,500 :: 200 : 700 = 1000.

For the more settled portions of the state, at least, it is believed this method of distributing the population to reorganized or newly organized corporations is sufficiently accurate for all comparative purposes. In the few instances in which a separate vote was not cast by new towns at the last general election, or the articles of incorporation had not yet been filed with the Secretary of State, the license returns from the new towns were added to the returns from the original towns and no further account of the new towns taken.

The areas of the several townships on which the density of population was computed were approximated from the recorded county plats and the ordinances of incorporation on file in the office of the Secretary of State. No attempt is made to estimate the density of population in cities and villages. Such computations would be open to so great liabilities of error that the attempt would be impracticable and the results, if obtained, of little significance.

It appeared upon first tabulation of the license returns that in the matter of saloon license and rates of license, particularly outside of cities and villages, there were marked differences between various sections of the state. Roughly, the state was divided into three sections, throughout each of which there were common characteristics, not found, or found

in a very different degree in other divisions. Of course, no such lines of demarcation could be sharply and definitely drawn so as to include in a compact group all examples of a given type and to exclude all of another. But it was determined that, by following county lines, compact divisions could be made in which certain conditions appeared to be typical. This was confirmed by the division itself and the study of the various divisions. The three divisions as laid out were as follows:

Eastern division counties: Brown, Calumet, Dodge, Door, Fond du Lac, Jefferson, Kenosha, Kewaunee, Manitowoc, Marinette, Milwaukee, Oconto, Outagamie, Ozaukee, Racine, Shawano, Sheboygan, Walworth, Washington, Waukesha, Winnebago; in all twenty-one counties. This division may be roughly described as composed of the two eastern tiers of counties and part of the third. For the most part, the western boundary of this division lies near the twelfth division of longitude.

Southwestern division counties: Adams, Buffalo, Columbia, Crawford, Dane, Dunn, Eau Claire, Grant, Green, Green Lake, Iowa, Juneau, La Crosse, Lafayette, Marquette, Monroe, Pepin, Pierce, Richland, Rock, St. Croix, Sauk, Trempealeau, Vernon, Waushara; in all twenty-five counties. This area may be roughly described as that part of the state lying south and west of a line from Lake Winnebago to the Falls of the St. Croix River, with the exception of Jackson county.

Northern division counties are Ashland, Barron, Bayfield, Burnett, Chippewa, Clark, Douglas, Florence, Forest, Rusk, Iron, Jackson, Langlade, Lincoln, Marathon, Oneida, Polk, Portage, Price, Sawyer, Taylor, Vilas, Washburn, Waupaca, Wood; in all twenty-five counties. This division embraces the area not included in the other two divisions.

As already stated, these lines do not strictly define all examples of particular conditions in any case within any particular division. But in each division certain characteristics predominate to such a degree and differences from the remaining divisions are so marked as to make the separate presentation of the facts as to each division not only warrantable but highly

profitable. It is true that the division is not ideal. No ideal geographical division could be made that would be of any advantage. In no case can any general statement be made about conditions of any division to which there will not be important exceptions. But with the detailed tables herewith appended, no one need be led into serious error by taking the generalizations too literally. Meanwhile, the generalizations themselves are most valuable. They bespeak the most important, the most characteristic features of the conditions prevailing in each division. By comparison of the corresponding conditions between the various divisions of the state, these characteristics become emphasized and the conclusions take on added significance. It is almost an axiom in the analysis of large bodies of figures, that statistical information is at its best only when it is comparative. Since there has not been published any similar official investigation, comparison with former conditions here, or present or former conditions elsewhere, was impossible. The next best thing was to divide the state and compare the divisions one with another. In the analysis of these returns so much space will necessarily be occupied in stating general facts about the several divisions and the state as a whole that little specific account can be taken of the many exceptions to these generalizations. In this sort of discussion, a single representative average is more important and more expressive than several contrary details which are necessarily effaced in the average itself.

It has been the purpose in writing the foregoing detailed account of the method of this investigation to lay bare the entire source and nature of the conclusions herein offered in order that they may be taken at their true worth. The appended tables give in full the detailed statistics upon which the results and summaries are based.

RESULTS OF INQUIRY.

ANALYSIS OF SUMMARY TABLES.

No particular sequence of order or importance is dictated by the character of the facts to be presented. The analysis of these statistics may, therefore, properly follow approximately the lines which were found most convenient in arranging the tabulations. The interdependence of the facts offered is not intricate and there is little chance for confusion. The detailed matter of the several summary tables is presented first in the order of the tables. The most important features of this analysis will then be brought together in the form of a general conclusion.

CITIES AND VILLAGES HAVING LICENSES IN FORCE.

The total number of cities and villages reporting licenses in force is 296. Of this number 113, or 38.2%, are cities and 183, or 61.8% are villages. With reference to location these cities and villages are distributed as follows: Eastern division counties, 45 cities, 55 villages; Southwestern division counties, 42 cities, 85 villages; Northern division counties, 26 cities, 43 villages.

The number of cities and villages having the various rates for saloon license are as follows: minimum rate, 187 cities and villages, or 63.2% of all; medium rate, 14 cities and villages, or 4.7% of all; and maximum rate, 95 cities and villages, or 32.1% of all cities and villages granting licenses.

In the Eastern division counties, 83 cities and villages, or 83% of all licensing cities and villages of this division have the minimum rate for license. In the Southwestern division counties, 62 cities and villages, or 48.9% of all in the division have the minimum rate. In the Northern division counties, the minimum rate maintains in 42 cities and villages, or 61% of all licensing cities and villages in the division. The medium rate of license, as designated by statute,

is in force in only a comparatively small number of cities and villages; 2 in the Eastern division counties, 8 in the South Western, and 4 in the Northern. Out of 100 licensing cities and villages in the Eastern division counties, only 15 have voted for the maximum rate of license under the law. In the Southwestern division counties, however, the maximum rate prevails in 57 cities and villages, or nearly 45% of all licensing cities and villages in these counties. In the Northern division counties the number of maximum license cities and villages is 23, or 33.2% of all licensing cities and villages in these counties.

Minimum rate of license is the most common among the cities and villages of all parts of the state. In the Eastern counties, more than four-fifths of the cities and villages have the minimum rate. In the Southwestern counties, the cities and villages having the minimum rate are only a little more numerous than those having the maximum rate. In the Northern counties, the proportions are approximately the same as for the state as a whole. These variations between the divisions are much smaller, however, where the number of licenses at the various rates is the basis for consideration, it appearing that the high license cities and villages of the Southwestern counties are those which, on the average, grant the smallest number of licenses each. The reverse appears to be true for the Northern counties, where the maximum rate is in force in most of the larger cities.

The total number of saloon licenses in force in 296 cities and villages is 6,289. Of this number, 4,036, or 64.2%, are in force in cities and villages in Eastern counties; 1,220, or 19.4%, in cities and villages in Southwestern counties; and 1,030, or 16.4%, in cities and villages in Northern counties. Of the total number of licenses in force in cities and villages, 5,153, or 82%, are at the minimum rate; 116, or 1.8%, at the medium rate, and 1,020, or 16.2%, at the maximum rate. The average number of licenses each granted by cities and villages having the minimum rate is over 2.5 times as great as the average number of licenses each for cities and villages

having the maximum rate. The city of Milwaukee alone, which has the minimum rate, grants more than twice as many saloon licenses as are granted by all cities and villages in the state having the maximum rate for license. Considered by divisions, the proportion of licenses issued at the various rates is as follows: minimum rate, Eastern counties, 94.8% of all licenses in force in cities and villages, Southwestern counties, 62.8%, and Northern counties, 54.3%; medium rate, Eastern counties, .2%, Southwestern counties, 3.8%, Northern counties, 5.9%; maximum rate, Eastern counties, 5%, Southwestern counties, 33.4%; and Northern counties, 39.8%.

Thus it is seen that in the cities and villages of the Eastern counties, the minimum rate for license is the rule prevailing with only very few exceptions. The minimum rate licenses of this division constitute nearly 75% of all minimum rate licenses in all cities and villages of the state. In the cities and villages of the Southwestern counties, the minimum rate licenses are nearly twice as numerous as the maximum rate licenses. In the cities and villages of the Northern counties, the ratio of minimum to maximum rate licenses is nearly 3 to 2. In all divisions, the number of medium rate licenses is comparatively very small.

The total population of cities and villages granting license was 990,031 at the last census. Of this number, 604,884, or 61%, were in the cities and villages of the Eastern counties; 225,032, or 22.7%, in those of the Southwestern counties; and 160,115, or 16.3%, in those of the Northern counties.

The average population per license in the cities and villages granting license was 150 for the cities and villages of the Eastern division counties, 184 for those of the Southwestern division counties, 155 for those of the Northern division counties, and 157.4 for all cities and villages granting license in the state. Of the 296 cities and villages, 80, or 27%, average less than 100 population per license; 143, or 48.3%, average 100 and over but less than 200; 44, or 14.9%, average 200 and over, but less than 300; and 29, or 9.8%, average 300 and over. The proportion of cities and villages averaging more or less than 200 population per license does not vary

materially between the several divisions of counties. A slightly greater proportion in the class averaging less than 200 population per license is found in the Northern counties, but it is probable that this discrepancy grows out of the fact that the population here given is for 1900 and the number of saloon licenses for 1905, when the population of some of these Northern cities and villages was very much greater than at the time of the census. The only other important deviation from uniformity is that the proportion of cities and villages having an average population of less than 100 per license in the Southwestern counties is roughly about one-third less than the proportion in this same class for cities and villages in each of the other divisions. On the whole, therefore, it appears that the foregoing averages in the cities and villages of the several divisions and of the state as a whole are fairly representative.

Analytical summary of Table XV.

Cities and villages having licenses in force.

HEADINGS.	DIVISIONS.			State as a whole.
	Eastern counties.	South-western counties.	Northern counties.	
Total number cities and villages.....	100	127	69	296
Total number of cities.....	45	42	26	113
Total number of villages.....	55	85	43	183
Number of cities and vil. having min. rate.....	83	62	42	187
Number of cities and vil. having med. rate.....	2	8	4	14
Number of cities and vil. having max. rate.....	15	57	23	95
Per cent. of cities and vil. having min. rate....	83	48.9	61.0	63.2
Per cent. of cities and vil. having med. rate....	2	6.3	5.8	4.7
Per cent. of cities and vil. having max. rate....	15	44.8	33.2	32.1
Total number of licenses.....	4,036	1,220	1,033	6,289
Number of licenses at min. rate.....	3,826	766	561	5,153
Number of licenses at med. rate.....	8	47	61	116
Number of licenses at max. rate.....	202	407	411	1,020
Per cent. of licenses at min. rate.....	9.8	62.8	54.3	82.0
Per cent. of licenses at med. rate.....	.2	3.8	5.9	1.8
Per cent. of licenses at max. rate.....	5.0	33.4	39.8	16.2
Total population of cities and villages.....	604,884	225,032	160,115	990,031
Average population per license.....	150	184	155	157.4
Cities and villages classified as to average population per license.				
Number having less than 100.....	32	26	22	80
Number having 100 but less than 200.....	43	65	35	143
Number having 200 but less than 300.....	15	21	8	44
Number having 300 or over.....	10	15	4	29
Per cent. having less than 100.....	32.0	20.5	31.9	27.0
Per cent. having 100 but less than 200.....	43.0	51.2	50.7	48.3
Per cent. having 200 but less than 300.....	15.0	16.5	11.6	14.9
Per cent. having 300 or over.....	10.0	11.8	5.8	9.8

TABLE XV.—*Eastern Division Counties.*

Table showing cities and villages granting licenses, the number of licenses, the rate of license, population, and average population per license.

Cities and villages granting license.	No. of licenses.	Rate.		Population, 1900.	Population per license.
		Minimum—e.	Maximum—g.		
BROWN CO.—					
Depsare, c.....	19	g		4,038	213
Green Bay, c.....	117	e		18,684	159
Wrightstown, v.....	8	e		420	52
CALUMET CO.—					
Chilton, c.....	14	e		1,460	104
Brilliou, v.....	11	e		855	77
Hilbert, v.....	6	e		497	83
New Holstein, v.....	9	e		753	84
DODGE CO.—					
Beaver Dam, c.....	32	e		5,128	160
Horicon, c.....	6	e		1,376	229
Juneau, c.....	11	e		891	81
Mayville, c.....	16	e		1,815	118
Fox Lake, v.....	7	e		890	127
Lomira, v.....	7	e		492	70
Lowell, v.....	3	e		333	111
Randolph, v.....	4	e		738	184
Reeseville, v.....	6	e		393	65
Theresa, v.....	6	e		355	69
Neosho, v.....	5	e		348	70
DOOR CO.—					
Sturgeon Bay, c.....	23	e		3,372	147
FOND DU LAC CO.—					
Fond du Lac, c.....	100	e		15,110	151
Waupun, c.....	8	e		3,185	398
Ripon, c.....	12	g		3,818	318
Brandon, v.....	2	g		663	331
Cambellsport, v.....	8	e		635	80
Oakfield, v.....	3	e		648	212
N. Fond du Lac, v.....	13	e		1,100	85
JEFFERSON CO.—					
Jefferson, c.....	21	e		2,584	123
Ft. Atkinson, c.....	8	g		3,043	380
Watertown, c.....	57	e		8,437	148
Johnson's Creek, v.....	5	e		623	125
Lake Mills, v.....	4	g		1,387	347
Palmyra, v.....	4	f		716	179
Waterloo, v.....	11	e		1,137	103
KENOSHA CO.—					
Kenosha, c.....	63	g		11,606	184
KEWAUNEE CO.—					
Algoma, c.....	15	e		1,738	116
Kewaunee, c.....	13	e		1,773	136
MANITOWOC CO.—					
Manitowoc, c.....	81	e		11,786	146
Two Rivers, c.....	20	e		3,784	189
Reedsville, v.....	11	e		428	39
Kiel, v.....	10	e		924	92
MARINETTE CO.—					
Marinette, c.....	52	g		16,195	311
Peshigo, c.....	14	e		2,318	165
Coleman, v.....	8	e		423	53
MILWAUKEE CO.—					
Milwaukee, c.....	2,100	e		285,315	136
S. Milwaukee, c.....	43	e		3,302	79
Wauwatosa, c.....	8	e		2,842	355
N. Milwaukee, v.....	13	e		1,049	81
E. Milwaukee, v.....	6	e		504	84
Cudahy, v.....	29	e		1,366	47
W. Allis, v.....	31	e		2,494	81
Whitefish Bay, v.....	2	e		512	256

TABLE XV.—*Eastern Division Counties—Continued.*

Cities and villages granting license.	No. of licenses.	Rate. Minimum—e. Medium—f. Maximum—g.	Population, 1900.	Population per license.
OCONTO CO.—				
Oconto, c.....	37	e	5,646	152
Oconto Falls, v.....	8	e	796	99
Gillette, v.....	7	e	415	59
OUTAGAMIE CO.—				
Appleton, c.....	74	e	15,085	240
Kaukauna, c.....	34	e	5,115	150
Seymour, c.....	11	e	1,026	93
Black Creek, v.....	5	e	545	109
Hortonville, v.....	10	e	913	91
Little Chute, v.....	10	e	944	94
Shiocton, v.....	4	f	492	123
Welcome, v.....	4	e	426	106
OZAUKEE CO.—				
Cedarburg, c.....	17	e	1,626	96
Port Washington, c.....	30	e	3,010	100
Grafton, v.....	6	e	478	79
RACINE CO.—				
Burlington, c.....	18	e	2,526	140
Racine, c.....	137	e	29,102	213
Union Grove, v.....	2	g	520	260
SHAWANO CO.—				
Shawano, c.....	17	e	1,863	110
Aniwa, v.....	5	e	398	80
Birnamwood, v.....	7	e	475	68
Matoon, v.....	7	e	839	120
Tigerton, v.....	6	e	723	120
Wittenberg, v.....	4	g	798	199
SHEBOYGAN CO.—				
Plymouth, c.....	17	e	2,257	132
Sheboygan, c.....	97	e	22,962	237
Sheboygan Falls, v.....	7	e	1,301	186
Cedar Grove, v.....	3	e	327	109
Elkhart Lake, v.....	8	e	464	58
WALWORTH CO.—				
Delavan, c.....	6	g	2,244	374
Elkhorn, c.....	6	g	1,731	288
Whitewater, c.....	11	g	3,405	309
Eas. Troy, v.....	4	e	613	153
Genoa Junction, v.....	3	g	642	214
Sharon, v.....	4	g	945	236
WASHINGTON CO.—				
Hartford, c.....	15	e	1,632	109
West Bend, c.....	19	e	2,119	113
Kewaunee, v.....	12	e	679	57
Schleisingsville, v.....	4	e	549	137
WAUKESHA CO.—				
Oconomowoc, c.....	17	e	2,880	169
Waukesha, c.....	44	e	7,419	168
Eagle, v.....	3	e	324	108
Hartland, v.....	3	e	629	209
Menomonee Falls, v.....	10	e	687	69
Pewaukee, v.....	10	e	714	71
WINNEBAGO CO.—				
Menasha, c.....	23	e	5,589	243
Neenah, c.....	27	e	5,954	350
Oshkosh, c.....	125	e	28,284	226
Omro, v.....	6	g	1,358	226
Winneconne, v.....	7	e	1,042	149
Totals.....	4,036		604,884	150
	3,826	e		
	8	f		
	202	g		

TABLE XV.—*Southwestern Division Counties.*

Table showing cities and villages granting licenses, the number of licenses, the rate of license, population and average population per license.

Cities and villages granting licenses.	No. of licenses.	Rate.		Population 1900.	Population per license.
		Minimum—e. Medium—f. Maximum—g.			
BUFFALO CO.—					
Alma, c.	11	e		1,201	109
Buffalo, c.	1	e		254	254
Fountain City, c.	9	f		1,031	115
Mondovi, c.	6	g		1,208	201
COLUMBIA CO.—					
Columbus, c.	14	e		2,349	168
Kilbourn, c.	10	e		1,134	113
Portage, c.	26	e		5,459	210
Cambria, v.	3	e		561	187
Fall River, v.	4	e		447	112
Lodi, v.	4	g		1,065	267
Rio, v.	8	e		479	60
CRAWFORD CO.—					
Prairie du Chien, c.	21	e		3,232	154
Bell Center, v.	3	e		243	81
Gays Mills, v.	3	g		445	148
Lynxville, v.	2	f		322	161
Soldiers Grove, v.	7	g		680	97
Stuben, v.	2	e		338	169
Wauzeka, v.	5	e		471	94
DANE CO.—					
Madison, c.	87	e		19,164	221
Stoughton, c.	17	g		3,431	202
Bellville, v.	3	e		385	128
Black Earth, v.	3	g		466	155
Cambridge, v.	5	e		628	125
Dane, v.	5	e		280	56
Deerfield, v.	5	e		515	103
Mazomanie, v.	4	e		902	225
Oregon, v.	4	f		697	174
Sun Prairie, v.	10	f		938	94
Waunakee, v.	6	e		443	74
DUNN CO.—					
Menomonie, c.	15	g		5,655	377
EAU CLAIRE CO.—					
Altoona, c.	4	e		721	180
Augusta, c.	4	g		1,256	314
Eau Claire, c.	87	e		17,517	201
Fairchild, v.	3	f		947	316
GRANT CO.—					
Boscobel, c.	5	g		1,637	327
Platteville, c.	8	g		3,340	417
Lancaster, c.	7	g		2,403	343
Bloomington, v.	4	e		611	153
Cuba City, v.	3	f		636	212
Potosi, v.	4	e		434	108
Fennimore, v.	5	e		1,035	207
Montfort, v.	2	e		627	314
Cassville, v.	6	e		979	163
Hazel Green, v.	3	g		442	147
Muscoda, v.	9	e		743	82
GREEN CO.—					
Brodhead, c.	10	f		1,584	158
Monroe, c.	24	e		3,927	163
Monticello, v.	6	e		559	93
New Glarus, v.	9	e		720	80
GREEN LAKE CO.—					
Berlin, c.	19	e		4,489	236
Dartford, v.	4	e		450	112
Markesan, v.	5	e		706	141
Princeton, v.	14	e		1,202	86

TABLE XV.—*Southwestern Division Counties*—Continued.

Cities and villages granting licenses.	No. of licenses.	Rate. Minimum—e. Medium—f. Maximum—g.	Population, 1900.	Population per license.
IOWA CO.—				
Dodgeville, c.....	6	g	1,865	311
Mineral Point, c.....	12	e	2,941	250
Highland, v.....	6	e	913	152
Linden, v.....	3	e	543	181
Ridgeway, v.....	4	e	412	103
Cobb, v.....	2	g	310	155
JUNEAU CO.—				
Elroy, c.....	7	g	1,685	241
Mauston, c.....	15	e	1,718	114
New Lisbon, c.....	6	e	1,014	169
Camp Douglas, v.....	4	e	432	108
Lynden Station, v.....	6	e	334	56
Wonewoc, v.....	4	g	811	203
LA CROSSE CO.—				
La Crosse, c.....	153	e	28,895	189
Onalaska, c.....	4	e	1,368	342
Bangor, v.....	6	e	633	105
West Salem, v.....	4	g	725	181
LA FAYETTE CO.—				
Darlington, c.....	8	g	1,808	226
Shullsburg, c.....	8	e	1,250	156
Belmont, v.....	3	f	509	169
Blanchardville, v.....	6	g	573	95
Benton, v.....	3	g	546	182
Gratiot, v.....	7	f	335	48
MARQUETTE CO.—				
Montello, v.....	10	e	982	98
Westfield, v.....	8	e	749	93
MONROE CO.—				
Sparta, c.....	9	g	3,555	395
Tomah, c.....	14	e	2,810	203
Cashton, v.....	5	e	510	102
Kendall, v.....	3	e	460	153
Norwalk, v.....	5	e	357	71
Wilton, v.....	7	e	400	57
PEPIN CO.—				
Durand, c.....	15	e	1,458	97
Pepin, v.....	3	e	407	136
Stockholm, v.....	1	g	241	241
PIERCE CO.—				
Prescott, c.....	8	g	1,002	125
River Falls, c.....	6	g	2,098	335
Ellsworth, v.....	9	e	1,052	117
Maiden Rock, v.....	1	e	304	304
Spring Valley, v.....	9	e	1,021	113
RICHLAND CO.—				
Cazenovia, v.....	3	e	422	141
Viola, v.....	3	e	432	144
Lone Rock, v.....	6	e	512	85
ROCK CO.—				
Janesville, c.....	50	g	13,185	264
Edgerton, c.....	9	g	2,192	244
Beloit, c.....	20	g	10,436	348
Orfordville, v.....	3	e	540	146
Clinton, v.....	3	e	871	290
ST. CROIX CO.—				
Hudson, c.....	17	e	3,259	192
New Richmond, c.....	9	e	1,631	181
Glenwood, c.....	3	e	1,789	596
Baldwin, v.....	6	e	631	105
Hammond, v.....	4	e	404	101

TABLE XV.—*Southwestern Division Counties*—Continued.

Cities and villages granting licenses.	No. of licenses.	Rate. Minimum—e. Medium—f. Maximum—g.	Population, 1900.	Population per license.
SAUK CO.—				
Baraboo, c.....	16	g	5,751	359
Reeseburg, c.....	12	g	2,225	185
Ableman, v.....	4	e	430	107
La Valle, v.....	3	e	386	128
Prairie du Sac, v.....	4	e	656	164
Sauk City, v.....	8	e	810	101
Spring Green, v.....	6	e	621	103
TREMPEALEAU CO.—				
Arcadia, v.....	15	g	1,273	85
Blair, v.....	4	g	438	109
Eleva, v.....	3	g	370	123
Galesville, v.....	6	g	862	144
Independence, v.....	10	g	630	63
Osseo, v.....	4	g	472	118
Whitehall, v.....	6	g	600	100
Trempealeau, v.....	1	e	609	101
VERNON CO.—				
Stoddard, v.....	5	e	380	76
De Soto, v.....	3	e	387	129
Hillsboro, v.....	3	g	785	262
WAUSHARA CO.—				
Hancock, v.....	3	g	513	171
Plainfield, v.....	5	g	728	146
Red Granite, v.....	4	e	372	93
Wautoma, v.....	7	g	624	89
Wild Rose, v.....	4	e	390	98
Totals.....	1,220	.....	225,032	184
	766	e		
	47	f		
	407	g		

TABLE XV.—Northern Division Counties.

Showing cities and villages granting licenses, number of licenses, rate of licenses, population and average population per license

Cities and villages granting licenses.	No. of licenses.	Rate. Minimum—e. Medium—f. Maximum—g.	Population, 1900.	Population per license.
ASHLAND CO.—				
Ashland, c.....	90	e	13,074	145
Butternut, v.....	9	e	650	72
BARRON CO.—				
Cumberland, c.....	9	e	1,328	147
Chetek, c.....	5	e	531	106
Barron, c.....	5	e	1,493	299
Rice Lake, c.....	16	e	3,002	187
Cameron, v.....	3	e	394	131
Turtle Lake, v.....	5	f	326	65
BAYFIELD CO.—				
Washburn, c.....	19	e	5,784	340
BURNETT CO.—				
Grantsburg, v.....	5	e	612	122
CHIPPEWA CO.—				
Chippewa Falls, c.....	49	f	8,094	165
Stanley, c.....	10	e	2,387	239
Auburn, v.....	3	e	492	164
Bloomer, v.....	11	e	811	74
Boyd, v.....	6	e	674	112
Cadott, v.....	8	e	840	105
CLARK CO.—				
Greenwood, c.....	3	e	708	256
Neillsville, c.....	15	e	2,104	140
Colby, c.....	8	e	667	83
Abbottsford, v.....	10	e	443	44
Dorchester, v.....	8	e	631	79
Loyal, v.....	9	e	645	72
Thorp, v.....	8	e	838	105
Withee, v.....	3	g	290	97
DOUGLAS CO.—				
Superior, c.....	140	e	31,091	222
RUSK CO.—				
Bruce, v.....	8	e	208	26
Ladysmith, v.....	8	g	560	70
JACKSON CO.—				
Black River Falls, c.....	9	f	1,938	215
Alma Center, v.....	4	f	458	114
Merrillan, v.....	3	g	739	246
LANGLADE CO.—				
Antigo, c.....	31	g	5,145	166
LINCOLN CO.—				
Merrill, c.....	40	e	8,537	213
Tomahawk, c.....	33	e	2,291	70
MARATHON CO.—				
Wausau, c.....	62	e	12,354	199
Athens, v.....	8	e	685	86
Brokaw, v.....	1	e	386	386
Edgar, v.....	12	e	478	40
Marathon, v.....	9	e	328	59
Mosinee, v.....	5	e	657	131
Spencer, v.....	3	e	409	136
Schofield, v.....	3	e	783	261
ONEIDA CO.—				
Rhineland, c.....	41	e	4,998	122

TABLE XV.—Northern Division Counties—Continued.

Cities and villages granting licenses.	No. of licenses.	Rate. Minimum—e. Medium—f. Maximum—g.	Population, 1900.	Population per license.
POLK CO.—				
Amery, v	5	g	905	181
Centuria, v	3	e	173	57
Clear Lake, v	3	f	327	176
Frederic, v	6	e	193	32
Osceola, v	3	g	466	155
St. Croix Falls, v	2	g	622	311
PORTAGE CO.—				
Stevens Point, c	54	e	9,524	176
Amherst, v	4	g	558	140
PRICE CO.—				
Phillips, c	15	g	1,820	121
Kennan, v	3	e	143	48
Park Falls, v	13	e	540	41
Prentice, v	8	e	939	117
TAYLOR CO.—				
Medford, c	14	g	1,758	125
Rib Lake, v	8	e	1,126	141
WASHBURN CO.—				
Spooner, v	9	e	1,142	127
WAUPACA CO.—				
Clintonville, c	12	e	1,653	138
New London, c	17	e	2,742	161
Waupaca, c	9	g	2,912	324
Embarrass, v	2	e	270	135
Fremont, v	4	e	263	66
Manawa, v	7	e	714	106
Marion, v	7	e	602	86
Weyauwega, v	8	e	911	114
WOOD CO.—				
Marshfield, c	43	e	5,040	117
Grand Rapids, c	26	e	4,493	173
Auburndale, v	3	e	241	80
Nekoosa, v	8	e	745	93
Totals	1,033	.....	163,115	155
	531	e		
	61	f		
	411	g		

CITIES AND VILLAGES HAVING VOTED "NO LICENSE."

The total number of cities and villages in the state having voted "No License" is 21, of which 5 are cities and 16 are villages. The total population of these 21 cities and villages in 1900 was 17,738. The distribution of these "no license" cities and villages by divisions is as follows: Eastern counties, 1 city, 1 village, total population, 3,298; Southwestern counties, 3 cities and 14 villages, total population, 13,606; Northern counties, 1 city and 1 village, total population, 834. The population of "no license" cities and villages is distributed

by divisions in the following proportions: Eastern, 18.6%; Southwestern, 76.7%; Northern, 4.7%.

TABLE XVI.—Analytical summary.
 Cities and villages having voted "No License."

Headings.	Divisions.			State as a whole.
	Eastern.	Southwest'n	Northern.	
Number of cities and villages.....	2	17	2	21
Number of cities.....	1	3	1	5
Number of villages.....	1	14	1	16
Population of cities and villages.	3,298	13,606	834	17,738

Cities and villages.	Population 1900.
Eastern Division Counties:	
Walworth County—	
Lake Geneva, c.....	2,585
Walworth, v.....	713
Total	3,298
Southwestern Division Counties:	
Columbia County—	
Pardeeville, v.....	788
Povnette, v.....	633
Dane County—	
De Forest, v.....	424
Mt. Horeb, v.....	864
Green County—	
Albany, v.....	797
Iowa County—	
Rewey, v.....	340
Lafayette County—	
Argyle, v.....	642
Richland County—	
Richland Center, c.....	2,321
Rock County—	
Evansville, c.....	1,864
St. Croix County—	
Star Prairie, v.....	344
Sauk County—	
Merrimac, v.....	350
North Freedom, v.....	485
Vernon County—	
Viroqua, c.....	1,950
La Farge, v.....	488
Ontario, v.....	389
Readstown, v.....	403
Westby, v.....	524
Total	13,606
Northern Division Counties:	
Marathon County—	
McMillan, v.....	200
Wood County—	
Pittsville, c.....	634
Total	834

VILLAGES HAVING NO APPLICATION.

There were no cities in the state which reported no licenses in force because of no applications. The total number of villages in this class is 5, all, but one, located in the Northern division counties. In two cases, the reports state that the maximum rate for license had been voted and in two more that the absence was due to a strong anti-saloon sentiment. The total population of these 5 villages in 1900 was about 2,267, but it has no doubt considerably increased since that time.

TABLE XVII.— *Villages having no applications for licenses.*

	Population, 1900.
Eastern Division Counties..... None.....	
Southwestern Division Counties— Dunn County, Colfax, v.....	544
Northern Division Counties— Barron Count.—Prairie Farm, v.....	409
Waupaca County—Iola, v.....	558
Waupaca County—Scandinavia, v.....	320
Wood County—Port Edwards, v.....	445
Five villages.....	2,267

TOWNS HAVING LICENSES IN FORCE.

Table XVIII and Analytical Summary.

The total number of towns reporting licenses in force is 500. Of this number, 224, or 44.8%, are in the Eastern division counties. 103, or 20.6%, in the Southwestern division counties, and 173, or 34.6%, in the Northern. Of the total number of towns granting licenses, 452, or 90.4%, have the minimum rate, 24, or 4.8%, have the medium rate, and a like number have the maximum rate. The proportion of towns having the minimum rate is about 3% higher for the towns in the Eastern and Northern divisions than the average for the state as a whole, while the proportion for minimum rate towns in the Southwestern counties is 78.6% of all licensing towns, or about 12% less than for the state as a whole.

The total number of licenses in force in 500 towns granting license is 2,443, an average of nearly 5 licenses per town. Of the total number of licenses in towns, 1,414, or 58%, are in towns of the Eastern division counties; 311, or 12.7%, in Southwestern counties, and 718, or 29.3% in Northern counties. Of the total number of licenses in force in towns, 2,276, or 93.2%, are at the minimum rate; 87, or 3.6% at the medium rate; and 80, or 3.2%, at the maximum rate. The number of low rate licenses in Eastern division towns is 59.4% of the total number of low rate licenses in all towns, and 55.3% of all towns at whatever rate. The proportion of minimum rate licenses in the Eastern and Northern division towns is slightly greater than for the state as a whole, while in the Southwestern division it is 13.4% less, being but 79.8% of all licenses in towns in this division.

The total population, in 1900, of licensing towns was about 551,923. Of this total population, 315,499, or 57.2%, were in towns in the Eastern counties; 100,203, or 18.1%, in towns of the Southwestern division; and 136,221, or 24.7%, in towns of the Northern division.

The average population per license in the 500 licensing towns was about 226. In the licensing towns of the Eastern counties, the average was 223 population per license, or nearly the same as for all licensing towns. The average for the licensing towns of the Southwestern counties, was 322 per license, or about 42% more than for the state as a whole. The average population per license in the licensing towns of the Northern counties figures out at 188, but this figure is, no doubt, very misleading owing to the rapid growth of the population which has taken place during the years since the last census. Some instances were noted in which the vote cast in some of these towns at the last general election exceeded the total population as reported in the last census. There can be no question but that the average population per license in the licensing towns of this division should be much higher than here appears. Just how much this average actually is, it is, of course, impossible to determine. It is presumably not much,

if any, lower than that for the licensing towns of the Eastern division counties.

Of the total number of towns granting license within their own corporate limits, 166, or 33.2%, have on or within their boundaries incorporated cities or villages in which licenses are in force. These 166 towns are distributed numerically as follows: Eastern division licensing towns, 82 towns; Southwestern division, 33 towns; Northern division, 51 towns. The proportion which the number of licensing towns, also having on or within their boundaries cities or villages granting license, bears to the whole number of licensing towns in the several divisions is as follows: Eastern, 36.6% of all licensing towns; Southwestern, 32.1%; and Northern, 29.5%.

ANALYTICAL SUMMARY OF TABLE XVIII

Towns having license in force.

Headings.	Divisions.			State as a whole.
	Eastern counties.	South-western counties.	Northern counties.	
Total number of towns	224	103	173	500
Number towns having min. rate....	209	81	162	452
Number towns having med. rate....	6	12	6	24
Number towns having max. rate....	9	10	5	24
Per cent. towns having min. rate..	93.3	78.6	93.6	90.4
Per cent. towns having med. rate..	2.7	11.7	3.5	4.8
Per cent. towns having max. rate..	4.0	9.7	2.9	4.8
Total number of licenses	1,414	311	718	2,443
Number of licenses at min. rate....	1,352	248	676	2,276
Number licenses at med. rate.....	25	38	24	87
Number licenses at max. rate.....	37	25	18	80
Per cent. licenses at min. rate.....	95.6	79.8	94.2	93.2
Per cent. licenses at med. rate.....	1.8	12.2	3.6	3.6
Per cent. licenses at max. rate.....	2.6	8.0	2.2	3.2
Total population	315,499	100,203	136,221	551,923
Average population per license	223	322	188	226
Number of towns having licensing city or village on or within their boundaries	82	33	51	166
Per cent. of towns having licensing city or village on or within their boundaries	36.6	32.1	29.5	33.2

TABLE XVIII—EASTERN DIVISION COUNTIES.

Table showing by counties the number of towns granting licenses, their population, total number of licenses in force, the average population per license; the number of towns granting licenses at minimum, medium and maximum rates and the number of licenses at each rate; and the number of licensing towns having a licensing city or village on or within their boundaries.

Name of county.	No. of towns.	Total population of licensing towns.	Total No. of licenses.	Average population per license.	Minimum rate.		Medium rate.		Maximum rate.		No. of licensing towns having licensing city or village.
					No. towns.	No. licenses.	No. towns.	No. licenses.	No. towns.	No. licenses.	
Brown	15	18,685	89	210	14	86	1	3			3
Calumet	8	12,163	44	276	8	44					6
Dodge	16	26,261	54	375	16	54					8
Door	10	11,021	37	293	8	30			2	7	2
Fond du Lac ..	12	13,990	70	200	11	69			1	1	5
Jefferson	12	14,662	29	505	11	25	1	4			5
Kenosha	6	8,132	27	301	1	2	1	7	4	18	2
Kewaunee	10	13,701	58	236	10	58					3
Mantowoc	1	25,276	125	222	17	120			1	5	6
Marinette	7	10,750	76	142	7	76					5
Milwaukee	7	32,543	245	133	7	245					5
Oconto	12	10,266	57	180	12	57					1
Outagamie	10	13,621	42	324	10	42					5
Ozaukee	7	11,249	60	187	7	60					1
Racine	7	11,536	45	257	6	39			1	6	3
Shawano	16	16,076	57	282	16	57					6
Sheboygan	14	21,636	83	261	14	83					3
Walworth	6	6,870	24	286	3	13	3	11			3
Washington	12	17,759	89	200	12	89					4
Waukesha	13	19,510	93	210	13	93					4
Winnebago	6	5,792	1	579	6	10					4
Totals	103	100,203	311	322	31	248	12	38	10	25	33

SOUTHWESTERN DIVISION COUNTIES.

Table showing by counties the number of towns granting licenses, their population, total number of licenses in force, the average population per license; the number of towns granting licenses at minimum, medium and maximum rates and the number of licenses at each rate; and the number of licensing towns having a licensing city or village on or within their boundaries.

Name of county	No. of towns.	Total population of licensing towns.	Total No. of licenses.	Average population per license.	Minimum rate.		Medium rate.		Maximum rate.		No. of licensing towns having licensing city or village.	
					No. towns.	No. licenses.	No. towns.	No. licenses.	No. towns.	No. licenses.		
Adams	1	588	2	294	.....	.....	.....	.....	.....	.....	.....	.....
Buffalo	9	6,821	22	310	8	18	1	4	1	2	.....	6
Columbia	4	4,142	7	592	4	7	.....	.....	.....	.....	.....	1
Crawford	4	3,653	9	406	2	3	2	6	.....	.....	.....	4
Dane	10	11,951	45	263	8	37	1	2	1	6	.....	3
Dunn	4	3,656	9	406	2	3	1	4	1	2	.....	1
Eau Claire	1	1,731	6	288	1	6	.....	.....	.....	.....	.....	.....
Grant	10	8,987	36	257	9	34	1	2	.....	.....	.....	.....
Green	2	1,859	3	615	2	3	.....	.....	.....	.....	.....	.....
Green Lake	3	2,643	6	440	6	6	.....	.....	.....	.....	.....	.....
Iowa	3	4,445	7	635	2	5	.....	.....	.....	.....	.....	.....
Juneau	4	4,793	14	342	2	10	2	4	1	2	.....	1
La Crosse	8	7,832	39	201	6	32	.....	.....	.....	.....	.....	.....
La Fayette	3	2,731	4	683	2	2	1	2	.....	.....	.....	.....
Marquette	5	3,027	11	275	5	11	.....	.....	.....	.....	.....	.....
Monroe	4	4,120	8	515	3	7	.....	.....	.....	.....	.....	.....
Pepin	1	1,142	3	381	1	3	.....	.....	.....	.....	.....	.....
Pierce	2	2,443	8	306	1	4	1	4	.....	.....	.....	.....
Richland	1	1,140	9	124	1	9	.....	.....	.....	.....	.....	.....
Rock	2	2,307	5	461	1	1	1	4	.....	.....	.....	.....
St. Croix	7	7,088	17	423	5	13	.....	.....	.....	.....	.....	.....
Sauk	6	6,121	19	322	6	19	.....	.....	.....	.....	.....	.....
Trempealeu	1	495	4	124	1	4	.....	.....	.....	.....	.....	.....
Vernon	3	2,795	3	932	2	2	.....	.....	.....	.....	.....	.....
Waushara	5	3,693	15	246	4	9	1	6	.....	.....	.....	.....
Totals	103	100,203	311	322	81	248	12	38	10	25	.....	33

NORTHERN DIVISION COUNTIES.

Table showing by counties the number of towns granting licenses, their population, total number of licenses in force, the average population per license; the number of towns granting licenses at minimum, medium and maximum rates and the number of licenses at each rate; and the number of licensing towns having a licensing city or village on or within their boundaries.

Name of county.	No. of towns.	Total population of licensing towns.	Total No. of licenses.	Average population per license.	Minimum rate.		Medium rate.		Maximum rate.		No. of licensing towns having licensing city or village.
					No. towns.	No. licenses.	No. towns.	No. licenses.	No. towns.	No. licenses.	
Ashland	4	4,272	41	104	4	41					1
Barron	5	3,750	20	187	4	17	1	3			2
Bayfield	5	4,788	46	104	2	30	1	7	2	9	
Burnette											
Chippewa	8	9,895	18	550	8	18					6
Clark	12	9,935	23	437	11	22	1	3			5
Douglas	3	4,841	44	110	3	44	1				2
Florence	2	2,652	14	187	2	14					
Forest	3	742	16	46	2	14			1	2	
Rusk	7	2,499	19	131	7	19					2
Iron	5	6,616	76	87	5	76					
Jackson	3	1,629	7	233	3	7					1
Langlade	10	5,341	30	178	10	30					2
Lincoln	10	4,879	34	143	10	34					4
Marathon	35	25,501	93	274	35	93					12
Oneida	5	2,501	21	119	5	21					1
Polk	5	2,727	10	273	2	5	2	3	1	2	1
Portage	8	11,446	43	266	7	38			1	5	4
Price	4	1,884	12	157	4	12					1
Sawyer	1	2,72	13	209	1	13					
Taylor	10	6,878	35	199	9	27	1	8			1
Vilas	2	2,298	26	88	2	26					
Washburn	7	2,799	20	140	7	20					
Waupaca	5	5,239	14	374	5	14					1
Wood	14	10,285	41	251	14	41					5
Totals	173	136,221	718	188	162	676	6	24	5	18	51

POPULATION AND AREAS IN TOWNS.

The total population (1900) in all towns reporting as to license was 1,049,475. This represents nearly the entire population of the state outside of incorporated cities and villages. Of this total population, 392,463 are in the towns of the Eastern division counties; 413,529 are in towns of the Southwestern division counties; and 243,483 are in the Northern counties. Of this total population of towns, 551,923, or 52.6%, are in the 500 towns granting license; 206,785, or 19.7%, are in the 223 towns which have voted "No license;" and 290,767, or 27.7%, are in the 376 towns which have no application for license. The average population for licensing towns is therefore about 1,104, for "No license" towns about 928, and for towns having no applications about 774.

Considered by divisions, it is seen that in the Eastern counties, 315,499, or 80.4% of the total population outside of cities and villages is in the towns having license in force. Only 34,333, or 8.7%, are in "No license" towns and only 42,631, or 10.9%, are in towns having no application for license. In the Southwestern counties, on the other hand, 100,203, or only 24.3% of the population outside of cities and villages is in towns granting license. The towns voting "No license" in these counties embrace 127,339, or 30.8% of the total population of all towns, while the towns having no applications embrace 185,987, or 44.9% of the total population of all towns in these counties. In the northern counties the proportions in each class of towns stand approximately half way between those for the Eastern and Southwestern counties and follow very closely the average results for the state as a whole.

The total area of towns as estimated from the recorded plates is 54,121 square miles. Of this total area, 11,679 square miles, or 21.3%, is in towns of the Eastern division counties, 17,208 square miles, or 31.8%, in those of the Southwestern, and 25, 234, or 46.9%, in those of the Northern. Divided as to license the total areas of towns stand as follows: licensing towns, 26,650 square miles, or 49.3% of the total; "no license" towns, 10,983 square miles, or 20.2% of the total; and towns having no application, 16,488 square miles, or 30.5% of the total. The proportions of the areas in each class of towns with reference to licenses stand in about the same relations for the several divisions as the corresponding proportions for population already given.

The average population for all towns reporting, based on these estimates, is about 19.4 per square mile. In the Eastern division towns, the average is highest, being 33.6 per square mile. In the Southwestern division towns it is 24.1 per square mile, and in those of the Northern division, only 9.6. These estimates, of course, are open to the criticism already repeated that the population in some of these towns, particularly in the last named division, is now considerably greater than reported in the census upon which these estimates are based.

Considered with reference to license, it appears that for all licensing towns the average population per square mile is 20.7, for "No license" towns 18.8, and for towns having no applications 17.6.

In the towns of the Eastern division this difference in density of population is most marked, standing, for licensing towns, at 35.9 per square mile, for "No license" towns, at 25.1 per square mile, and for the towns having no application for license, at 27.7 per square mile. In the towns of the South-western division, the average population per square mile for licensing towns is 25.2, for "no license" towns it is 25.9, and for those having no application for license it is 22.5. For the Northern division towns the average population per square mile can hardly be considered of significance in this connection. The same relation, however, is here as observable between the averages for the several classes of towns as for the state as a whole, the average population per square mile ranging 9.8 for licensing towns through 9.6 for "No license" towns, to 9.3 for the towns having no application for license. In these townships of the northern part of the state, the average density of population is not of itself significant, much depending on whether the population of these towns whose areas range from 36 to 2,720 square miles is scattered or centralized.

TABLE XIX.—Analytical summary.
Population and Areas of License, "No License" and No application towns.

Headings.	Divisions.			State as a whole.
	Eastern counties.	South-western counties.	Northern counties.	
Total population, all towns.....	392,463	413,529	243,483	1,049,475
Population of licensing towns.....	315,499	100,203	136,221	551,923
Population of "No license" towns.....	34,333	127,339	45,113	206,785
Population of No application towns....	42,631	185,987	62,149	290,767
Per cent. of populat'n in licensing towns.	80.4	24.3	55.8	52.6
Per cent. of pop. in "No license" towns...	8.7	30.8	18.5	19.7
Per cent. of pop. in No application towns	10.9	44.9	25.7	27.7
Total areas in square miles, all towns....	11,679	17,208	25,234	54,121
Areas of licensing towns.....	8,769	4,003	13,873	26,650
Areas of "No license" towns.....	1,370	4,915	4,088	10,983
Areas of No application towns.....	1,540	8,290	6,658	16,488
Per cent. of area in licensing towns.....	75.1	23.2	55.0	49.3
Per cent. of area in "No license" towns...	11.7	28.6	18.6	20.2
Per cent. of area in No application towns	13.2	48.2	26.4	30.5
Average populat'n per sq. mile, all towns	33.6	24.1	9.6	19.4
Average pop. per sq. mi., licensing towns.	35.9	25.2	9.8	20.7
Av. pop. per sq. mi., "No license" towns..	25.1	25.9	9.6	18.8
Av. pop. per sq. m., No application towns	27.7	22.5	9.3	17.6

TABLE XIX—*Eastern division counties.*

Classification of population, area and density of population, showing by counties the total population and the per cent. of population, and the total areas and population per square mile of all towns classified as follows: Towns granting license, towns having voted "No license," and towns having no application for license.

NAME OF COUNTY.	TOTAL POPULATION.				PER CENT. OF POPULATION.			TOTAL AREAS—SQUARE MILES.				AVERAGE POPULATION PER SQUARE MILE.			
	In towns granting license.	In towns having voted "No License."	In towns having no application.	In all towns.	In towns granting license.	In towns having voted "No License."	In towns having no application.	In towns granting license.	In towns having voted "No License."	In towns having no application.	In all towns.	In towns granting license.	In towns having voted "No License."	In towns having no application.	In all towns.
Brown	18,685	3,992	540	23,217	80.5	17.2	2.3	375	121	7.5	503.5	49.8	32.9	72.0	46.7
Calumet	12,163	1,350	.....	13,513	90.0	.....	10.0	281	32	.....	313	43.3	42.2	.....	43.2
Dodge	20,261	3,223	6,341	29,825	67.8	10.8	21.4	560	108	193	861	36.2	19.9	32.8	34.7
Door	11,021	2,048	1,142	14,211	77.6	14.4	8.0	375	61	35	471	29.9	33.6	32.6	30.2
Fond du Lac	13,990	5,874	4,633	24,497	57.2	23.9	18.9	394	174	139	707	35.5	33.7	33.3	34.6
Jefferson	14,662	555	2,850	18,067	81.2	3.1	15.7	415	18	75	508	35.3	30.8	38.0	35.5
Kenosha	8,132	1,999	.....	10,101	89.5	.....	19.5	201	72	.....	273	40.5	27.4	.....	37.0
Kewaunee	13,701	.....	.....	13,701	100.0	.....	.....	340	.....	.....	340	40.3	.....	.....	40.3
Manitowoc	25,276	.....	.....	25,276	100.0	.....	.....	586	.....	.....	586	43.2	.....	.....	43.2
Marquette	10,750	1,136	.....	11,886	90.5	9.5	.....	1,036	216	.....	1,252	10.4	5.3	.....	9.0
Milwaukee	32,543	.....	.....	32,543	100.0	.....	.....	275	.....	.....	275	118.0	.....	.....	118.0
Oconto	10,266	232	2,888	13,386	76.7	1.7	21.6	801	108	180	1,089	12.8	2.1	16.0	12.3
Outagamie	13,621	1,498	5,033	20,152	67.6	7.4	25.0	323	72	172	557	42.2	20.8	29.3	35.5
Ozaukee	11,249	.....	.....	11,249	100.0	.....	.....	228	.....	.....	228	49.3	.....	.....	49.3
Racine	11,536	1,960	.....	13,496	85.5	14.5	.....	262	72	.....	334	44.0	27.2	.....	40.4
Shawano	16,076	2,533	2,165	20,744	77.4	12.0	10.6	627	72	166	865	25.7	34.8	13.0	24.0
Sheboygan	21,636	.....	1,598	23,034	93.9	.....	6.1	474	.....	36	510	45.7	.....	38.9	45.2
Walworth	6,870	2,208	7,303	16,381	41.8	13.4	44.8	214	71	281	566	32.1	31.1	26.0	29.0
Washington	17,759	.....	851	18,610	95.5	.....	4.5	405	.....	24	429	43.8	.....	35.5	43.3
Waushara	19,510	1,015	2,051	22,576	86.4	4.5	9.1	468	36	71	575	41.7	28.2	28.9	39.3
Winnebago	5,792	4,770	5,436	15,998	36.2	29.8	34.0	129	137	161	427	44.8	34.8	33.7	37.5
Totals	315,499	34,333	42,631	392,463	80.4	8.7	10.9	8,769	1,370	1,540.5	11,679.5	35.9	25.1	27.7	33.6

TABLE XIX.—*Southwestern division counties.*

Classification of population, area and density of population, showing by counties the total population and per cent. of population and the total areas and population per square mile of all towns, classified as follows: Towns granting license; towns having voted "No License;" and towns having no application for license.

NAME OF COUNTY.	TOTAL POPULATION.				PER CENT. OF POPULATION.			TOTAL AREAS—SQUARE MILES.				AVERAGE POPULATION PER SQUARE MILE.			
	In towns granting license.	In towns having voted "No License."	In towns having no application.	In all towns.	In towns granting license.	In towns having voted "No License."	In towns having no application.	In towns granting license.	In towns having voted "No License."	In towns having no application.	In all towns.	In towns granting license.	In towns having voted "No License."	In towns having no application.	In all towns.
Adams	588	2,625	5,888	9,101	6.6	28.9	64.5	42	189	451	682	14.0	13.9	13.0	13.3
Buffalo	6,821	1,639	4,611	13,071	52.2	12.5	35.3	371	82	225	678	18.4	20.0	20.5	19.3
Columbia	4,142	2,843	11,018	18,003	23.0	15.8	61.2	152	126	477	755	47.0	22.6	23.4	23.8
Crawford	3,653	4,085	3,730	11,468	31.9	35.6	32.5	196	186	219	601	18.6	22.0	17.1	19.1
Dane	11,951	16,318	9,921	38,190	31.3	42.7	26.0	341	479	359	1,179	35.1	34.1	27.7	32.3
Dunn	3,656	7,560	8,172	19,388	18.8	38.9	42.3	149	319	383	851	24.5	23.7	21.4	22.8
Eau Claire	1,731	2,619	6,901	11,251	15.4	23.3	61.3	63	124	443	630	27.5	20.3	15.6	17.9
Grant	8,987	4,975	12,032	25,994	34.5	19.1	46.4	378	218	577	1,173	23.8	22.8	20.9	22.2
Green	1,859	3,245	9,782	14,886	12.5	21.8	65.7	70	110	288	468	25.5	29.9	34.0	31.0
Green Lake	2,643	1,288	5,060	8,991	29.4	14.3	56.3	97	48	202	347	27.3	26.8	25.0	25.0
Iowa	4,445	7,726	3,569	15,740	27.1	49.2	23.7	174	379	208	761	25.5	20.4	17.4	21.6
Juneau	4,793	1,831	8,011	14,635	32.8	12.5	54.7	197	123	466	786	24.3	14.9	17.2	18.6
La Crosse	7,832	2,117	1,427	11,376	68.7	18.6	12.7	308	98	55	461	25.4	21.6	26.0	24.7
La Fayette	2,731	4,261	8,518	15,510	17.6	27.4	55.0	89	186	321	596	30.7	22.9	26.5	26.0
Marquette	3,027	1,414	4,337	8,778	34.5	16.1	49.4	147	76	243	466	22.3	18.6	17.8	18.8
Monroe	4,120	5,019	10,721	19,890	20.7	25.4	53.9	176	216	517	909	23.4	25.4	20.7	21.9
Pepin	1,142	1,522	3,135	5,799	19.6	26.3	54.1	47	34	150	231	24.3	44.8	20.9	25.1
Pierce	2,443	7,162	9,109	18,714	13.0	38.3	48.7	62	207	307	576	39.4	34.6	29.7	32.5
Richland	1,140	7,506	7,345	15,991	7.1	46.9	46.0	36	264	285	585	31.7	28.4	25.7	27.4
Rock	2,307	7,973	12,375	22,655	10.4	35.2	54.4	70	204	428	702	32.9	39.1	28.9	32.3
St. Croix	7,088	8,026	3,500	18,614	38.1	43.2	18.7	272	341	133	746	26.1	23.9	26.3	24.9
Sauk	6,121	9,655	5,516	21,292	28.7	45.3	26.0	244	338	256	838	25.1	28.6	20.6	25.4
Traverse	495	3,303	14,062	17,860	2.8	18.5	78.7	21	134	580	735	23.6	24.7	24.3	24.3
Vernon	2,795	9,219	11,014	23,028	13.6	39.3	47.1	121	293	393	807	23.1	31.5	28.0	29.0
Waushara	3,693	3,378	6,233	13,304	27.7	25.4	46.9	180	141	324	645	20.5	23.9	19.2	20.6
Totals.	100,203	127,339	185,987	413,529	24.3	30.8	44.9	4,003	4,915	8,290	17,208	25.2	25.9	22.5	24.1

THE LIQUOR TRAFFIC IN WISCONSIN.

TABLE XIX.—Northern division counties.

Classification of population, area and density of population, showing by counties the total population and per cent. of population and the total areas and the population per square mile of all towns, classified as follows: Towns granting license; towns having voted "No License;" and towns having no application for license.

NAME OF COUNTY.	TOTAL POPULATION.				PER CENT. OF POPULATION.			TOTAL AREA—SQUARE MILES.				AVERAGE POPULATION PER SQUARE MILE.			
	In towns granting license.	In towns having voted "No License."	In towns having no application.	In all towns.	In towns granting license.	In towns having voted "No License."	In towns having no application.	In towns granting license.	In towns having voted "No License."	In towns having no application.	In all towns.	In towns granting license.	In towns having voted "No License."	In towns having no application.	In all towns.
Ashland.....	4,272	1,133	420	5,825	73.4	19.4	7.2	500	294	115	909	8.5	3.9	3.7	6.4
Barron.....	3,755	5,011	7,436	16,202	23.1	30.9	46.0	194	305	396	896	19.3	16.4	18.8	18.1
Bayfield.....	4,788	1,691	40	6,919	69.2	24.1	6.4	797	565	440	1,802	6.0	3.0	4.1	3.8
Burnett.....	.....	3,840	3,026	6,866	.....	56.0	44.0	.....	503	381	884	.....	7.6	7.9	7.8
Chippewa.....	9,895	2,396	2,833	15,127	65.3	15.8	18.9	512	203	250	965	19.3	10.4	11.3	15.7
Clark.....	9,935	1,078	9,046	20,059	49.7	5.4	44.9	502	72	642	1,216	19.8	15.0	14.7	16.5
Douglas.....	4,841	.....	403	5,244	92.3	.....	7.7	758	.....	540	1,298	6.4	.....	.....	4.1
Florence.....	2,652	545	.....	3,197	82.9	17.1	.....	391	90	.....	481	6.8	6.1	.....	6.6
Forest.....	742	519	135	1,396	53.1	37.1	9.8	422	470	190	1,082	1.8	1.1	.....	1.3
Rusk.....	2,499	.....	1,341	3,840	65.1	.....	34.9	535	.....	398	933	4.7	.....	3.4	4.0
Iron.....	6,616	.....	.....	6,616	100.0	.....	.....	776	.....	.....	776	8.5	.....	.....	8.5
Jackson.....	1,629	5,103	7,699	14,431	11.3	35.3	53.4	183	301	487	971	9.0	16.9	15.8	14.8
Langlade.....	5,341	886	1,281	7,508	71.2	11.8	17.0	517	287	68	872	10.3	3.1	18.8	8.6
Lincoln.....	4,879	.....	562	5,441	89.7	.....	10.3	740	.....	144	884	6.6	.....	3.9	6.1
Marathon.....	25,501	.....	1,062	26,563	96.0	.....	4.0	1,479	.....	108	1,587	17.2	.....	9.8	16.7
Oneida.....	2,501	45	1,331	3,877	64.4	1.2	34.4	675	144	345	1,164	3.7	0.3	3.9	3.3
Polk.....	12,727	6,136	5,252	14,115	19.3	43.4	37.3	218	288	446	952	12.5	21.3	11.8	14.8
Portage.....	11,445	5,368	2,588	19,401	59.0	27.7	13.3	417	235	126	778	27.5	22.8	20.5	24.9
Price.....	1,884	2,367	1,413	5,664	33.2	41.8	25.0	608	305	303	1,216	3.1	7.8	4.7	4.7
Sawyer.....	2,720	.....	.....	2,720	100.0	.....	.....	1,224	.....	.....	1,224	2.2	.....	.....	2.2
Taylor.....	6,978	112	1,288	8,378	83.3	1.4	15.3	676	36	275	987	10.3	3.1	4.7	8.5
Vilas.....	2,298	1,970	.....	4,268	53.8	46.2	.....	639	324	.....	963	3.6	6.1	.....	4.4
Washburn.....	2,799	.....	1,580	4,379	63.8	.....	36.2	431	.....	425	856	6.5	.....	3.7	5.1
Waupaca.....	5,259	5,632	10,309	21,180	24.7	26.6	48.7	172	203	368	743	30.4	27.7	28.0	28.5
Wood.....	10,285	1,281	2,701	14,267	72.1	9.0	18.9	512	72	211	795	20.1	17.8	12.8	18.0
Totals.....	136,221	45,113	62,149	243,483	55.8	18.5	25.7	13,878	4,698	6,658	25,234	9.8	9.6	9.3	9.6

DENSITY OF POPULATION.

TOWNS HAVING LICENSE IN FORCE.

Of the 500 towns having license 39, or 7.8%, have an average population estimated at less than 5 per square mile; 41, or 8.2%, have 5 but less than 10; 76, or 15.2%, have 10 but less than 20; 127, or 25.4%, have 20 but less than 30; 106, or 21.2%, have 30 but less than 40; 72, or 14.4%, have 40 but less than 50; and 39, or 7.8%, have 50 and over. Of the 50 towns having less than 10 per square mile, all but 7 are in the Northern counties and represent about 42% of the licensing towns of this division. It is probable that the population is chiefly centralized in small portions of the towns reporting license, (and average population of less than 10 per square mile), and therefore these figures for density of population are not representative as affecting this phase of the question.

The total number of towns having license in force in which the average of population is 10 and over but less than 40 per square mile is 309, or 61.8% of all licensing towns. In the Eastern division counties this class embraces 117 towns, or 51.3% of all licensing towns; in the Southwestern division counties, this class embraces 98 towns, or 95.1% of all licensing towns in this group; and in the Northern counties, the number of licensing towns in this class is 96, or 55.6% of the total number. The towns granting license in the eastern counties which are not embraced in the foregoing class, i. e., towns having average population from 10 to 40, are nearly all in the classes of the greater density of population, whereas in the Northern counties, the towns not embraced in this class are nearly all in classes of less density of population.

TOWNS HAVING VOTED "NO LICENSE."

Of the 223 towns in this class, 31 are in the Eastern division counties, 127 in the Southwestern division, and 65 in the Northern. The 19 towns in this class having an average of less

than 5 population per square mile are all in the Northern division and all except 2 of the 10 towns having 5 but less than 10 per square mile are also in the Northern division counties. The same general features for the distribution of towns by density of population are observable in respect to towns having voted "No license" as were pointed out for licensing towns. The proportion of towns in the classes from 10 to 40 population per square mile is somewhat greater, however, for the "No license" towns, indicating that, while the average population per square mile for all "No license" towns is slightly less than for licensing towns, the larger proportion of the "No license" towns are more nearly uniform and nearer the average density of population.

TOWNS HAVING NO APPLICATION FOR LICENSE.

Of the total number of towns having no application, 48, or only about 12.7%, are in the Eastern counties, 218, or 58%, are in the Southwestern division, and 110, or 29.3%, are in the Northern counties. Of the 63 towns averaging less than 10 population per square mile, all but 8 are in the Northern counties. Of the total number of towns having no application, 105, or 27.9%, have 10 and over but less than 20 population per square mile, while those averaging 20 and over number 208, or 55.3% of the total.

In the Eastern division, only 2 towns have less than 10 population per square mile and only 11 have less than 20. In the Southwestern division which embraces 218 towns, or 58% of all towns having no application, only 6 have an average population of less than 10 per square mile and 80 have less than 20 per square mile. In the Northern division, of the 110 towns having no applications, 33 average less than 5 population per square mile, 55 average less than 10, and 77 average less than 20 per square mile. The number of towns having no application and averaging less than 20 population per square mile constitute 22.9% of all such towns in the Eastern division, 36.8% in the Southwestern division, and 70% in the Northern division.

ANALYTICAL SUMMARY OF TABLE XX.

Towns having license in force classified by the average density of population.

Headings.	Divisions.			State as a whole.
	Eastern counties.	South-western counties.	Northern counties.	
Total number of towns	224	103	173	500
Number of towns having average population less than 5 per square mile	1	.....	38	39
5 but less than 10	6	.....	35	41
10 but less than 20	6	27	43	76
20 but less than 30	41	50	36	127
30 but less than 40	68	21	17	106
40 but less than 50	64	5	3	72
50 and over	38	.....	1	39
Per cent. of towns having average population less than 5 per sq. mile .....	.5	.....	21.9	7.8
5 but less than 10	2.7	.....	20.2	8.2
10 but less than 20	2.7	26.2	24.9	15.2
20 but less than 30	18.3	48.5	20.9	25.4
30 but less than 40	30.3	20.4	9.8	21.2
40 but less than 50	28.6	4.9	1.7	14.4
50 and over	16.9	.....	.6	7.8

ANALYTICAL SUMMARY OF TABLE XX

Towns having voted "no license" classified by the average density of population

Headings.	Divisions.			State as a whole.
	Eastern counties.	South-western counties.	Northern counties.	
Total number of towns	31	127	65	223
Number of towns having average population less than 5 per square mile .....	.....	.....	19	19
5 but less than 10	1	1	10	12
10 but less than 20	2	29	16	47
20 but less than 30	8	60	16	84
30 but less than 40	16	30	3	49
40 but less than 50	3	5	1	9
50 and over	1	2	.....	3
Per cent. of towns having average population less than 5 per sq. mile .....	.....	.....	29.3	8.5
5 but less than 10	3.2	.8	15.4	5.4
10 but less than 20	6.4	22.8	24.6	21.0
20 but less than 30	25.8	47.3	24.6	37.7
30 but less than 40	51.7	23.6	4.6	22.0
40 but less than 50	9.7	3.9	1.5	4.0
50 and over	3.2	1.6	.....	1.4

ANALYTICAL SUMMARY OF TABLE XX

Towns having no application for license classified by average density of population showing the number of towns in each state of the following classes:

Headings.	Divisions.			State as a whole.
	Eastern counties.	South-western counties.	Northern counties.	
Total number of towns	48	218	110	376
Number of towns having average population less than 5 per square mile			33	33
5 but less than 10	2	66	22	39
10 but less than 20	9	74	22	105
20 but less than 30	12	109	26	147
30 but less than 40	18	23	4	45
40 but less than 50	5	6	3	14
50 and over	2			2
Per cent. of towns having average population less than 5 per sq. mile			30.0	8.8
5 but less than 10	4.2	2.8	20.0	8.0
10 but less than 20	18.7	33.9	20.0	27.9
20 but less than 30	25.0	50.0	23.6	39.0
30 but less than 40	37.5	10.6	3.7	12.0
40 but less than 50	10.4	2.7	2.7	3.7
50 and over	4.2			.6

TABLE XX—EASTERN DIVISION COUNTIES.

Towns having license in force classified by average density of population, showing number of towns in each of the following classes:

Name of County.	Average Population per Square Mile.						
	Under 5.	5 to 10	10 to 20.	20 to 30.	30 to 40.	40 to 50.	50 and over.
Brown					1	9	5
Calumet					4	2	2
Dodge				3	8	5	
Door				5	5		
Fond du Lac			1	2	6	1	2
Jefferson				2	8	2	
Kenosha				1	2	2	1
Kewaunee					1	6	
Manitowoc					6	8	4
Marquette		3	2	2			
Milwaukee							7
Oconto	1	2	1	8			
Outagamie				1	4	4	1
Ozaukee						4	3
Racine				2		3	2
Shawano		1	1	9	4	1	
Sheboygan			1	1	3	4	5
Walworth				3	3		
Washington					4	5	3
Waukesha				1	5	5	2
Winnebago				1	1	3	1
Totals	1	6	6	41	68	64	38

SOUTHWESTERN DIVISION COUNTIES.

Towns having license in force, classified by average density of population, showing number of towns in each of the following classes:

Name of County.	Average Population per Square Mile.						
	Under 5.	5 to 10.	10 to 20.	20 to 30.	30 to 40.	40 to 50.	50 and over.
Adams			1				
Buffalo			7	2			
Columbia				2	2		
Crawford			4				
Dane				3	4	3	
Dunn			2		2		
Eau Claire				1			
Grant			2	7	1		
Green				2			
Green Lake				3			
Iowa				3			
Juneau		1		2		1	
La Crosse			1	5	2		
La Fayette				2	1		
Marquette			2	3			
Monroe			2	1	1		
Pepin				1			
Pierce					1	1	
Richland					1		
Rock				1	1		
St. Croix				5	2		
Sauk			1	3	2		
Trempealeau				1			
Vernon			1	2			
Waushara			3	1	1		
Totals			27	50	21	5	

NORTHERN DIVISION COUNTIES.

Towns having license in force, classified by average density of population, showing the number of towns in each of the following classes:

Name of County.	Average Population per Square Mile.						
	Under 5.	5 to 10.	10 to 20.	20 to 30.	30 to 40.	40 to 50.	50 and over.
Ashland		2	2				
Barron			3	2			
Bayfield	2	3					
Burnette							
Chippewa		1	2	4	1		
Clark		1	4	6	1		
Douglas	1	2					
Florence		2					
Forest	3						
Rusk	5	1	1				
Iron	2	2	1				
Jackson	1	1		1			
Langlade	3	2	1	4			
Lincoln	2	4	4				
Marathon	1	6	13	11	4		
Oneida	4	1					
Polk		1	1	3			
Portage			2	2	2	1	1
Price	3	1					
Sawyer	1						
Taylor	3	1	3	1	2		
Vilas	1	1					
Washburn	4	2			1		
Waupaca			1		4		
Wood	2	1	5	2	2	2	
Totals	38	35	43	36	17	3	1

EASTERN DIVISION COUNTIES.

Towns having "No License," classified by average density of population, showing number of towns in each of the following classes:

Name of County.	Average Population Per Square Mile.						
	Under 5.	5 to 10.	10 to 20.	20 to 30	30 to 40	40 to 50.	50 and over.
Brown					2	1	
Calumet						1	
Dodge				2	1		
Door				2			
Fond du Lac				1	4		
Jefferson					1		
Kenosha					2		
Kewaunee							
Manitowoc							
Marinette		1					
Milwaukee							
Oconto							
Outagamie			1	1			
Ozaukee							
Racine				2			
Shawano			1				1
Sheboygan							
Walworth					2		
Washington							
Waukesha				1			
Winnebago				1	2	1	
Totals		1	2	8	16	3	1

SOUTHWESTERN DIVISION COUNTIES.

Towns having voted "No License," classified by average density of population, showing number of towns in each of the following classes:

Name of County.	Average Population Per Square Mile.						
	Under 5.	5 to 10.	10 to 20.	20 to 30.	30 to 40.	40 to 50	50 and over.
Adams			4				
Buffalo			1	1			
Columbia			1	1	1		
Crawford			1	2			
Dane			1	7	4	2	
Dunn			3	3			
Fau Claire			2	1			
Grant			1	5			
Green				2	1		
Green Lake				1			
Iowa			4	3			
Juneau		1	1		1		
La Crosse				2			
La Fayette				5			
Marquette			1	1			
Monroe			2	3	1		
Pepin						1	
Pierce				1	5	1	
Richland				4	3		
Rock				2	2	1	1
St. Croix			2	7	1		
Sauk			2	3	3		1
Trempealeau			1	2			
Vernon				4	4		
Waushara			2		2		
Totals		1	29	60	30	5	2

NORTHERN DIVISION COUNTIES.

Towns having voted "No License," classified by average density of population, showing number of towns in each of the following classes:

Name of County.	Average Population Per Square Mile.						
	Under 5.	5 to 10.	10 to 20.	20 to 30.	30 to 40.	40 to 50.	50 and over.
Ashland	2	1					
Barron		1	3	2			
Bayfield	4						
Burnette	3	1	1				
Chippewa	1	1	1				
Clark			2				
Douglas							
Florence		1					
Forest	2						
Rusk	1						
Iron							
Jackson	1		2	3			
Langlade	2	1					
Lincoln							
Marathon							
Oneida	1						
Polk			3	4			
Portage			1	4	1		
Price	1	3	1				
Sawyer							
Taylor	1						
Vilas	1	1					
Washburn							
Waupaca			1	2	2	1	
Wood			1	1			
Totals	19	10	16	16	3	1	

EASTERN DIVISION COUNTIES.

Towns having no application for license, classified by average density of population, showing the number of towns in each of the following classes:

Name of County.	Average Population per Square Mile.						
	Under 5.	5 to 10.	10 to 20.	20 to 30.	30 to 40.	40 to 50.	50 and over.
Brown							1
Calumet							
Dodge				2	2	1	
Door			1		1		
Pond du Lac					4		
Jefferson					1	1	
Kenosha							
Kewaunee							
Manitowoc							
Marquette							
Milwaukee							
Oconto		1	1	2			
Outagamie			2	1	1	2	1
Ozaukee							
Racine							
Shawano		1	4				
Sheboygan					1		
Walworth			1	5	2		
Washington					1		
Waukesha				1	1		
Winnebago				1	4	1	
Totals		2	9	12	18	5	2

SOUTHWESTERN DIVISION COUNTIES.

Towns having no application for license, classified by average density of population, showing the number of towns in each of the following classes:

Name of County.	Average Population per Square Mile.						
	Under 5.	5 to 10	10 to 20.	20 to 30.	30 to 40.	40 to 50.	50 and over.
Adams			11	1			
Buffalo			3	3			
Columbia			2	12			
Crawford			3	1			
Dane			2	4	2	2	
Dunn			3	5		1	
Eau Claire		1	3	4			
Grant			1	3			
Green			9	6	1		
Green Lake			2	6	3		
Iowa			1	4	1		
Juneau			3	1			
La Crosse		2	5	5			
La Fayette				1			
Marquette			4	2	2		
Monroe		1	4	2			
Peplin			1	5	6	2	
Pepin			3	3			
Pierce			2	2	2	2	
Richland				8			
Rock				9	2	1	
St. Croix			1		3		
Sauk			3	4			
Trempealeau				10	1		
Vernon				6	4		
Waushara			5	4			
Totals		6	74	109	23	6	

NORTHERN DIVISION COUNTIES.

Towns having no applications for license, classified by average density of population, showing number of towns in each of the following classes:

Name of County.	Average Population per Square Mile.						
	Under 5.	5 to 10.	10 to 20.	20 to 30.	30 to 40.	40 to 50.	50 and over.
Ashland	1						
Barron		1	6	2	1		
Bayfield	1						
Burnette	1	2	1				
Chippewa	1		1	1			
Clark	2	5	4	4	1		
Douglas	1						
Florence							
Forest							
Rusk	4	1					
Iron							
Jackson	1	1	2	5			
Langlade	1				1		
Lincoln	1	1					
Marathon		2	1				
Oneida	4						
Polk	3	2	3	3		1	
Portage			1	2			
Price	3	2					
Sawyer							
Taylor	1	3					
Vilas							
Washburn	6	1					
Waupaca			1	7	1	2	
Wood	1	1	2	2			
Total	33	22	22	26	4	3	

CONTIGUITY OF LICENSING TO NON-LICENSING TERRITORIES.

An effort was made, in tabulating the returns for towns having voted "No license" and towns having no application for license, to obtain additional light on the situation by noting in a separate column the nearness of cities, villages, or towns having license in force. The location within the several towns of any center of business or population such as a city, village, post-office, or railroad station in which no licenses were in force was also noted. All cities having on or within their boundaries incorporated cities or villages in which licenses were in force were marked with a small letter *a*. All towns which were contiguous, i. e., whose boundaries were common on one side, to towns having licenses in force were marked with the letter *b*. All towns on or within whose boundaries there was located an incorporated city, village or other center of business or population, such as a post-office or railroad station, in which no license was in force were marked *c*. It was the purpose in noting this last fact to find roughly the number of non-licensing towns in which there were any centers of population or business, which, other conditions being favorable, might invite saloons.

Of the 223 "No license" towns in the state, 49, or 22%, have on or within their boundaries licensing cities or villages and, of these, 31 towns, or 13.9% of the total number are also contiguous to licensing towns. The total number of the "No license" towns contiguous to licensing towns is 155, or 69.5% of all such towns. The total number of "No license" towns containing non-licensing centers of business or population is 133 towns, or 59.6% of all such towns, but out of this number, 97, or 43.5% of the total of "No license" towns are contiguous.

Considered by divisions it appears that, in the Eastern counties, 5 of the 31 towns have on or within their boundaries licensing cities or villages and that all of these 5 towns are also contiguous to licensing towns. All but 4 towns out of the 31 are contiguous to licensing towns. Eighteen towns contain non-licensing centers but all except 4 of these are contiguous to licensing territory. Out of the 31 towns, 4, or 12.9%

of the total, are not contiguous to non-licensing cities, villages, or towns, and all of these contain non-licensing centers.

Of the 127 "No license" towns in the Southwestern division counties, 34, or about 26.7%, have licensing cities or villages on or within their boundaries, and of these 34, 19 are also contiguous to licensing towns. Of the 127 towns, 80, or about 63% of the total, are contiguous to licensing towns. Seventy-one towns contain non-licensing centers but out of this number, 49 are contiguous to licensing towns. Of the 127 "No license" towns in this division, 32, or 25.2% of the total number are not contiguous to licensing cities, villages, or towns, and of this number, 22 towns contain non-licensing centers of business or population.

Of the 65 "No license" towns in the Northern counties, 10 have on or within their boundaries licensing cities or villages, and of this number, 7 towns are also contiguous to licensing towns. The number of towns contiguous to towns having license in force is 48, or 73.8% of all "No license" towns in this division. The number of towns having non-licensing cities, villages, post-offices, or railroad stations, within their boundaries is 44, or 67.6% of the total number of "No license" towns in this division. Of this number, 34 towns, or 52.2% of the total, are contiguous to licensing towns. Of the 65 towns in this group, 14 are not contiguous to any licensing territory and of these, 10 contain centers of business or population.

TOWNS HAVING NO APPLICATION FOR LICENSE.

Out of the 376 towns in the state reporting no application for license, 162, or 43.1%, have on or within their boundaries licensing cities or villages, and of this number, 129, or 34.3% of the total, also have licensing towns contiguous. The whole number of towns, having no application, which are contiguous to towns having license in force is 264, or 70.2% of the total number of such towns. The total number containing non-licensing centers of business or population is 119, or 31.6% of all towns having no application. Out of these 119 towns, 73

are contiguous to towns having license in force. The total number of towns, having no application for license, which are not contiguous to any licensing town, city, or village is 79, or 21% of the total number of such towns, and of this number, 46 towns contain cities, villages, post-offices, or railroad stations.

Considered by divisions, the towns having no application for license present a situation not very unlike that shown for the "No license" towns. In the Eastern division, 30, or 62.4% of the 48 towns having no application, have on or within their boundaries cities or villages in which licenses are in force. All of these towns are, moreover, contiguous to licensing towns. The total number of towns having no application for license, which are contiguous to licensing towns embraces all but 2 of the towns in this group. There are seven towns having non-licensing centers of business or population, five of these being contiguous to licensing towns. The number of towns in the entire group not contiguous to licensing territory is 3, of which 2 have centers of business or population.

Of the 218 towns in the Southwestern division, 88, or 40.3%, have licensing cities or villages on or within their boundaries, and of this number, 58 are also contiguous to towns having license in force. The whole number of towns, having no applications, in this division which are contiguous to licensing towns is 127, or 58.2% of all such towns. The total number of towns in this group containing centers of population or business, in none of which licenses are in force, is 72, or 33% of the total number. The number of towns not contiguous to any licensing city, village, or town is 61, or 28.1% of the whole number of towns in the division having no applications for license. Of these 61 towns, 33 have centers of population or business.

Of the 110 towns in the Northern division counties which have no applications for license, 44, or 40%, have licensing cities or villages on or within their boundaries, and 41 of these are, moreover, contiguous to licensing towns. Of the total number of towns 92, or 83.7% are contiguous to licensing towns. The number of towns having centers of popula-

tion or business in none of which license is in force is 40, of which number 29 are contiguous to licensing towns. The total number of towns not contiguous to licensing territory is 15, of which 10 have non-licensing centers of population or of trade.

ANALYTICAL SUMMARY OF TABLE XXI.

Classification of towns voting "No License," with reference to contiguity of towns, cities and villages having license in force.

Headings.	Divisions.			State as a whole.
	Eastern counties.	South-western counties.	Northern counties.	
Total number of towns	31	127	65	223
No. of towns marked a.....	15	15	3	18
No. of towns marked b.....	8	12	7	27
No. of towns marked ab.....	5	19	7	31
No. of towns marked c.....	4	22	17	36
No. of towns marked bc.....	14	49	34	97
Per cent. of towns marked a.....		11.8	4.6	8.1
Per cent. of towns marked b.....	25.8	9.5	10.8	12.1
Per cent. of towns marked ab.....	16.1	14.9	10.8	13.9
Per cent. of towns marked c.....	12.9	17.3	15.4	16.1
Per cent. of towns marked bc.....	45.2	38.6	52.2	43.5

ANALYTICAL SUMMARY OF TABLE —.

Classification of towns having no application for license, with reference to contiguity of towns, cities and villages having license in force.

Headings.	Divisions.			State as a whole.
	Eastern counties.	South-western counties.	Northern counties.	
Total number of towns	48	218	110	376
No. of towns marked a.....	30	30	3	33
No. of towns marked b.....	10	30	22	62
No. of towns marked ab.....	30	58	41	129
No. of towns marked c.....	2	33	11	46
No. of towns marked bc.....	5	39	29	73
Per cent. of towns marked a.....		13.7	2.7	8.8
Per cent. of towns marked b.....	20.8	13.7	20.0	16.5
Per cent. of towns marked ab.....	62.4	26.6	37.3	34.3
Per cent. of towns marked c.....	4.2	15.1	10.0	12.2
Per cent. of towns marked bc.....	10.4	17.9	26.4	19.4

ANALYTICAL SUMMARY OF TABLE —.

Towns having no application for license classified by the average density of population.

Headings.	Divisions.			State as a whole.
	Eastern counties.	South-western counties	Northern counties.	
Total number of towns	48	218	110	376
No. of towns having average population:				
Less than 5 per square mile.....			33	33
5 but less than 10	2	6	22	30
10 but less than 20	9	74	22	105
20 but less than 30	12	109	26	147
30 but less than 40	18	23	4	45
40 but less than 50	5	6	3	14
50 and over	2			2
Per cent. of towns having average population:				
Less than 5 per square mile.....			30.0	8.8
5 but less than 10	4.2	2.8	20.0	8.0
10 but less than 20	18.7	34.0	20.0	27.9
20 but less than 30	25.0	50.0	23.6	39.1
30 but less than 40	37.5	10.5	3.6	12.0
40 but less than 50	19.4	2.7	2.8	3.7
50 and over	4.2			.5

TABLE XXI.

EASTERN DIVISION COUNTIES.

Towns having voted "No License" classified, viz.: a—towns having on or within their boundaries a licensing city or village; b—towns contiguous to other towns granting license; ab—both a and b apply; c—towns containing city, village, post office or railroad station where no license is in force and not containing licensing city or village; bc—both b and c apply.

County.	Total No. of towns.	a No. of towns.	b No. of towns.	ab No. of towns.	c No. of towns.	bc No. of towns.
Brown	3			1		2
Calumet	1			1		
Dodge	3		1			2
Door	2				1	1
Fond du Lac	5		3			2
Jefferson	1		1			
Kenosha	2		1			1
Kewaunee						
Manitowoc						1
Marinette	1					
Milwaukee						
Oconto						
Outagamie	2			1	1	
Ozaukee						
Racine	2			1		1
Shawano	2					2
Sheboygan						
Walworth	2		1			1
Washington						
Waukesha	1			1		
Winnebago	4		1		2	1
Totals	31		8	5	4	14

SOUTHWESTERN DIVISION COUNTIES.

Towns having voted "No License" classified, viz.: a—towns having on or within their boundaries a licensing city or village; b—towns contiguous to other towns granting license; ab—both a and b apply; c—towns containing city, village, postoffice or railroad station where no license is in force and not containing licensing city or village; bc—both b and c apply.

County.	Total No. of towns.	a No. of towns.	b No. of towns.	ab No. of towns.	c No. of towns.	bc No. of towns.
Adams	4				2	2
Buffalo	2					2
Columbia	3	1		2		
Crawford	3		2			1
Dane	14	1	2	2	1	7
Dunn	8	1	1		1	5
Eau Claire	3	2				
Grant	6			1		5
Green	3					1
Green Lake	1		1			
Iowa	7	2			3	2
Juneau	3	1	1			1
La Crosse	2			2		
La Fayette	5	1	1		3	
Marquette	2					2
Monroe	6		1		1	3
Pepin	1			1		
Pierce	7				3	4
Richland	7	1		1	1	3
Rock	6	1		2	1	1
St. Croix	10	1	2	5		1
Sauk	9	2		3	1	2
Trempealeau	3		1		2	
Vernon	8	1			3	4
Waushara	4					3
Totals	127	15	12	19	22	49

NORTHERN DIVISION COUNTIES.

Towns having voted "No License" classified, viz.: a—towns having on or within their boundaries a licensing city or village; b—towns contiguous to other town granting license; ab—both a and b apply; c—towns containing city, village, post office or railroad station where no license is granted and not containing licensing city or village; bc—both b and c apply.

County.	Total No. of towns.	a No. of towns.	b No. of towns.	ab No. of towns.	c No. of towns.	bc No. of towns.
Ashland	3		1		1	1
Barron	6	2		1		3
Bayfield	4					4
Burnette	5				3	2
Chippewa	3		1	1		1
Clark	2		1			
Douglas						
Florence	1					1
Forest	2					2
Rusk						
Iron						
Jackson	6		1		2	2
Langlade	3					3
Lincoln						
Marathon						
Oneida	1					1
Polk	7			2	1	4
Portage	6				1	4
Price	5		1	2		2
Sawyer						
Taylor	1		1			
Vilas	2		1			1
Washburn						
Waupaca	6	1		1	2	1
Wood	2					2
Totals	65	3	7	7	10	34

EASTERN DIVISION COUNTIES.

Towns having no application for license classified, viz.: a—towns having on or within their boundaries a licensing city or village; b—towns contiguous to other towns granting license; ab—both a and b apply; c—towns containing other towns granting license; ab—both a and b apply; c—towns containing city, village, postoffice or railroad station where no license is granted and not containing licensing city or village; bc—both b and c apply.

County.	Total No. of towns.	a No. of towns.	b No. of towns.	ab No. of towns.	c No. of towns.	bc No. of towns.
Brown	1			1		
Calumet						
Dodge	5		1	4		
Door	2		1	1		
Fond du Lac	4		1	2	1	
Jefferson	2		1	1		
Kenosha						
Kewaunee						
Manitowoc						
Marquette						
Milwaukee						
Oconto	4		1	2		
Outagamie	7		1	6		
Ozaukee						
Racine						
Shawano	5		1	3		1
Sheboygan	1			1		
Walworth	8		1	5		2
Washington	1			1		
Waukesha	2			2		
Winnebago	6		2	2	1	1
Totals	48		10	30	2	5

SOUTHWESTERN DIVISION COUNTIES.

Towns having no application for license classified, viz.: a—towns having on or within their boundaries a licensing city or village; b—towns contiguous to other towns granting license; ab—both a and b apply; c—towns containing city, village, postoffice or railroad station where no license is granted and not containing licensing city or village; bc—both b and c apply.

County.	Total No. of towns.	a No. of towns.	b No. of towns.	ab No. of towns.	c No. of towns.	bc No. of towns.
Adams	12		2		4	6
Buffalo	6	1	1	1		2
Columbia	14	3	2	7		
Crawford	4			4		
Dane	10		1	6	1	1
Dunn	10		2	6	2	2
Eau Claire	8		2	4		1
Grant	16	1	4	6		4
Green	11	1	3	2	2	1
Green Lake	6	2	1	2		1
Iowa	4			3		1
Juneau	12	1	2	4	1	3
La Crosse	1			1		
La Fayette	8	1		1	3	2
Marquette	7	1	3		1	2
Monroe	14	3	2	4	2	2
Pepin	6	2		1	1	1
Pierce	8	4		1		3
Richland	8			1	5	1
Rock	12	3	1	2	2	2
St. Croix	4		1	1	2	
Sauk	7	1	1			
Trempealeu	11	5		3	3	
Vernon	10		1	1	2	2
Waushara	9	1	1	2	2	2
Totals	218	30	30	58	33	39

NORTHERN DIVISION COUNTIES.

Towns having no application for license classified, viz.: a—towns having on or within their boundaries a licensing city or village; b—towns contiguous to other towns granting license; ab—both a and b apply; c—towns containing city, village, postoffice or railroad station where no license is granted and not containing licensing city or village; bc—both b and c apply.

County.	Total No. of towns.	a No. of towns.	b No. of towns.	ab No. of towns.	c No. of towns.	bc No. of towns.
Ashland	1			1		
Barron	10		3	4	1	2
Bayfield	1					1
Burnette	4			1	3	
Chippewa	3		1	1		1
Clark	16	1	5	3	1	5
Douglas	1					1
Florence						
Forest	1					1
Rusk	5		1	1		3
Iron						
Jackson	9	1	1	3	3	1
Langlade	2			1		1
Lincoln	2			1		1
Marathon	3			3		
Oneida	4			2		2
Polk	12		1	4	3	3
Portage	3		1	1		1
Price	5	1	2	2		
Sawyer						
Taylor	4		2	1		1
Vilas						
Washburn	7		4	1		2
Waupaca	11		1	8		1
Wood	6	1		3		2
Totals	110	4	22	41	11	29

GENERAL CONCLUSIONS.

The total number of cities, villages, and towns from which reports were received was 1421, all but 2 villages and 5 towns in the state. Of these 1,421 corporations, 118 are cities, 204 are villages, and 1,099 are towns.

Of the total number of towns, cities, and villages reporting, 113 cities, 183 villages, and 500 towns have licenses in force; 5 cities, 16 villages, and 223 towns have voted "No license" under the local option law; and 5 villages and 376 towns have no licenses in force for other reasons, principally because of no applications. The total number of corporations reporting licenses in force was 796, the number having voted "No license" 244, and the number having no applications 381.

The total population in 1900 of all cities and villages reporting was about 1,010,036. The total population of towns was 1,049,475, making the total population for the cities, vil-

lages, and towns reporting as to license, 2,059,511, or 99.5% of the total population of the state at the last census.

The total population of cities and villages reporting licenses in force was 990,031, or 98% of the population of all cities and villages reporting. The total populations of all towns reporting licenses in force was 551,923, or 52.6% of the population of all towns. The total population of all licensing towns, cities, and villages was, 1,541,954, or 74.8% of the population of all towns, cities, and villages reporting.

The population of cities and villages having voted "No license" under the local option law was 17,730, or 1.8% of the total population of cities and villages. The population of the towns having voted "No license" was 206,785, or 19.7% of the total population in towns. The total population for all cities, villages, and towns having voted "No license" was 224,523, or 10.9% of the total population for all cities, villages, and towns reporting.

There were no cities reporting no license in force for want of applications and the number of villages so reporting was only 5 with a total population of only 2,267, or about .2% of the population of cities and villages. The total population of towns having no license in force because of no applications or other reasons, but not on account of the local option law, was 290,767, or 28.3% of the total population of all towns reporting. The total population of all villages and towns reporting no license in force on account of no applications, etc., was 293,034, or 14.3% of the total population of all cities, villages, and towns reporting.

The "No license" or anti-saloon sentiment, of course, cannot be measured by the extent of license or "No license" regulations. The only absolute facts bearing definitely on this point is, after all, that a majority of the voters of 5 cities, 16 villages, and 223 towns, embracing 10.9% of the population of the state, are opposed to licensed saloons in these cities, villages and towns. How large the majority is remains undetermined. If determined, it would hardly measure the sentiment with any significant results without some facts in hand as to the forces which would inspire opposing sentiment.

It would require a stronger movement to prohibit license in a busy manufacturing city than in a sparsely settled agricultural town; in a thickly settled town with all neighboring centers of business or population having no license than in the same town with a licensing city in the center of it; or in a town or city surrounded by non-licensing towns than in one contiguous to towns having license in force. The proposition of license, it is generally agreed, is not to be looked upon as a question of the rights of certain persons to engage in the sale of a certain commodity but rather of the rights of a large portion of the public to buy a commodity for which it has a desire.

(While it is established that a majority in 10.9% of the population of the state, are opposed to liquor license, there also remains a large, possibly a larger body of like public sentiment outside of the "No license" cities, villages, and towns which is everywhere in the minority and does not proclaim itself on the face of the returns. It makes itself manifest, however, in the election of town boards; in high rates of license, which under some conditions are prohibitive, and in a community feeling which is not inviting to the liquor traffic.

The density of population, within certain limits, does not seem to have a uniform bearing upon the proposition. In a general way, however, it is in some degree significant. On the whole, the average population per square mile is a little higher in the licensing towns than in the "No license" towns. This, however, is what would be expected, since the former class embraces a large proportion of the more intensely industrial localities of the state. Again, the average density of population for towns having no application for license is a little less than that of "No license" towns. The average population of the licensing towns stood at 20.7 per square mile, and that of the "no license" towns at 18.8, and of the towns having no applications for license at 17.6.

Of the number of towns in each class, with reference to license, nearly the same proportion average less than 10 population per square mile, viz.: licensing towns, 16%, "No license" towns, 13.9%, and towns having no applications,

16.8%. But when the proportion of towns under 20 population per square mile is considered, it appears that the proportion which such towns bear to all licensing towns is 31.2%, to "No license" towns 34.9%, and to towns having no applications 44.7%. It would seem that a population of 20 per square mile would not, under ordinary conditions, be an inviting location for a saloon. Such an average would afford only about 63 population within a radius of one mile and about 250 within a radius of two miles, with less than one-third that number being adult male persons. It is conceivable, therefore, that in those licensing towns having an average population of less than 20 per square mile, this population is more or less centralized within the towns. Such indeed was determined to be the case in several instances, particularly in towns of large areas in the Northern counties. In the 34.9% of "No license" towns having less than 20 population per square mile, it is likely that a similar condition prevails to a considerable degree though probably not so marked. The sparsity of population of these towns made for the success of the anti-license movement in many cases. The proportion of towns under 20 population per square mile having no application is 40% greater than of towns of the same population having license in force. There can be no doubt that the sparsity of population in most of these towns is the cause of this situation. This excess in the proportion of towns under 20 population per square mile in the class having no applications over the licensing class, is, however, practically made up of towns which average over 10 population per square mile and under 20. If 16% of all towns granting license average less than 10 population per square mile, it would seem that sparsity of population in the towns having no application would not bar all towns having under 20 per square mile when nearly two-thirds of such towns have an average of over 10 population per square mile. It is likely, however, that a larger proportion of the towns in this class, do not have their population centralized within the towns to the degree which prevails in the licensing towns.

The presence of a licensing city or village on or within the boundaries of a town is not of itself enough, under ordinary conditions, to cause no application to be made for license in the town, or to make friends of the liquor traffic agreeable to license prohibition in the town. Indeed, a third of all licensing towns have also licensing cities or villages on or within their boundaries. The fact that a licensing town adjoins is of even less consequence. Yet each of these, no doubt, has some influence varying with conditions. In fact whatever complications attending a study of this sort arise from the fact that these various factors and forces cannot be successfully appreciated by themselves but must be considered collectively.

About one in five of the "No license" towns is not adjacent to licensing territory, either city, village, or town. 16.1% of all "No license" towns are included in this number which have business or population centers. Of course, these centers are small but they are places which, other conditions being favorable, would invite the location of saloons. On the other hand, about the same proportion of the "No license" towns have licensing cities or villages on or within their boundaries, and practically 70% of all such towns are contiguous to towns in which licenses are in force, while in all, over 77% of the total number are contiguous to licensing territory, city, village, or town. While these considerations do not diminish the importance of the fact that 244 cities, villages, and towns, with nearly 11% of the total population of the state, are controlled by "No license" sentiment, they do indicate that no very considerable portion of the state is without tolerably convenient facilities for the distribution of intoxicants.

Of the towns having no applications for license, about 43% are adjacent to licensing cities or villages and of this number, 16% are also in the class averaging less than 20 population per square mile. It would seem that under ordinary conditions, these combined factors would explain the absence of license in 16% of the towns. 34.3% of all towns having no applications for license are adjacent to both cities or villages and towns in which licenses are in force. The whole proportion adjacent to licensing towns is 70.2%. Taken in connection

with the foregoing, the fact that nearly 45% of these towns average less than 20 population per square mile, it would seem that the absence of license applications would be assignable to sparsity of population and nearness of licensing cities, villages, and towns in no less than one half of the towns. Of course, this can hardly be more than a guess. But, on the other hand, the fact that 21% of these towns, of which 12.2% contain business centers, are not adjacent to licensing towns, and that 55% of them average over 20 population per square mile, would seem to confirm this estimate. For the remainder of these towns, the absence of saloon license must be assigned to other causes not traceable on the map or in the census but found as a trait in the character of the population. There are several ways in which this public characteristic is effective other than through the local option law. In many places, the election of town boards, in others the voting of high license, which under the conditions are nearly prohibitive, while in still other cases, the mere force of public sentiment operates to exclude the liquor traffic from small areas, a town here and there. While these forces are less tangible and definite than the facts of density of population, nearness of licensing cities, etc., or the prohibition of saloon license under the local option law, they all operate to a greater or less degree, and in many cases just as effectively, to the same end. Moreover, they are always reflections of the public sentiment and character in a locality. In assigning approximately one-half of the towns reporting no applications for license to this class, an estimate is offered which is open to all the criticism which must attend any attempt to measure mathematically so intangible and complicated a quantity as public sentiment when not expressed by the absolute and definite vote. Yet this estimate is offered after careful study and is believed to be fairly reliable as an approximation.

The returns give the total number of licenses in force in the state, exclusive of 5 towns and 2 villages not reporting, as 8,732. Of this number, 6,289 are in force in cities and villages, and 2,443 in towns. Of all licenses reported, 7,429, or 85%, are at the minimum lawful rate, i. e., \$100.00 or \$200.00

per annum according to conditions; 203 licenses, or 2.3% of the total number are at the medium lawful rate, \$250.00 or \$350.00, according to conditions; and 1,100, or 12.7% of the total number, are at the maximum rate, \$400.00 or \$500.00. Since over 70% of all licenses are in cities and villages, the bulk of all licenses comes necessarily in the class which, under the law, must pay the higher initial rates, and which, if increased by vote, would pay the higher medium or maximum rates. Of the 2,443 licenses granted by towns, about 460 were granted under conditions which fixed the higher initial rate.

The license laws of Wisconsin favor the minimum rate of license. In fact, unless specific action is taken on the part of the electorate, this rate becomes established by law. This fact, no doubt, contributes much to the great predominance of minimum rates of license in the state. It is not unlikely that, were an election to fix the rate required by statutes in all cases and without any initial rate being set, or if the maximum rate were made the initial rate, subject to definite reductions by the electorate, there would be a smaller proportion of minimum rate licenses in force in the state. This, of course, would involve additional public expense for elections, but the public revenues would be, in some cases at least, permanently increased by higher license rates.

The medium rate for license is partly a reflection of anti-saloon sentiment in small villages and towns. The law provides that where, on a vote to fix the rate of license, there are not a majority of votes for the highest rate, the number of votes so cast shall be added to the number cast for the medium rate and if the total constitutes a majority of all votes cast, the medium rate becomes established. It is doubtful whether in many instances a majority of votes for this rate was obtained except for this provision in the law. The medium rate for license does not seem to be popular.

As above stated, 1,100 licenses are in force at the highest rate and at least 1,020 of these are at the \$500.00 rate. The majority of these high rate licenses are contributed by cities which maintain this rate as a matter of fiscal policy. It is of

interest incidentally to note that while 5,153 minimum rate licenses in cities yield annually about \$1,000,000, 1,020 maximum rate licenses yield an annual revenue of approximately \$500,000. High license as a public revenue policy is more frequent in the newer cities of the northern parts of the state, where the population is rapidly growing and expenditures for public improvements are necessarily large in proportion to taxable property. If it is true, as investigations affirm, that the taxation on intoxicants can be doubled without increased cost to consumers, it may be ventured that high license as a fiscal policy should be more common in cities.

The distribution of saloon licenses through the state in proportion to population brings out certain characteristics which are almost local to sections of the state. As already pointed out, the average population per license in force for licensing cities and villages was 157.4, for towns 226, and for cities, villages, and towns, 176.9. These figures, however, are not the best index to the distribution of license when applied to the several divisions for the reason that the demand which keeps these licenses in force comes from the non-licensing cities, villages, and towns as well as from the cities, villages, and towns in which the licenses are in force.

The total population of all towns, cities, and villages reporting was 2,059,511 and the number of licenses in force 8,732, the average population per license, for the state as a whole, based on 1900 census, would be therefore 236.5. The total population of all cities, villages, and towns reporting in counties of the Eastern part of the state was 1,000,645 and the number of licenses 5,450, the average population per license would be therefore 183.5. The counties of the group already described as the Southwestern counties reported 1,531 licenses and had 652,711 population, or an average of 432 population per license. The towns, cities, and villages of the Northern division counties reported 1,751 licenses in force and had 406,155 population, or an average per license of 231.5. For reasons already discussed, this last average is no doubt relatively a little too low. But taking the figures for what they are worth, it appears that the average population per license

in the Southwestern counties is 2.35 times as great. Stated another way, there are 5.44 licenses in force per 100 of population in the Eastern counties, 2.35 in the Southwestern, and 4.32 in the Northern counties.

The total annual revenues from the liquor licenses in force in all cities, villages and towns in the state was reported as \$1,908,550. In a few cases licenses are granted to summer resorts, etc., for a part of the year, at a fraction of the annual rate.

Based on this well nigh complete census of saloon licenses and the averages made by the returns of the partially complete investigation of the Federal Labor Bureau seven or eight years ago, some calculations and general estimates may be made which will prove instructive.

The total amount of public revenue derived from the manufacture and traffic in alcoholic liquors has increased very considerably since that investigation. The total receipts from licenses then reported was \$1,435,647. The increase since has amounted to 33%. The amount received from fines may be estimated to be about the same as those reported, say \$10,000. The total revenue of the federal government through excise taxes on malt liquors manufactured amounted in 1903 to \$3,900,372 and on distilled spirits to \$2,565,864, making the total federal revenues on Wisconsin product \$6,466,236. Adding to this total the fines collected, for violations of the license laws and the receipts of towns, cities, and villages for licenses, makes a grand total annual revenue from the manufacture and traffic in alcoholic liquors in Wisconsin for federal, state and municipal governments of \$8,384,786, not including taxes on property. For purposes of general estimates it may be assumed that each license represents an establishment in the sense of the federal labor bureau's investigation. There will be a few exceptions to this, no doubt, but they will be comparatively few. On this basis, the following estimates may be offered: The total value of all property employed in the liquor traffic, both owned and rented, is approximately \$33,500,000, of which about \$26,300,000 is in real estate and the remainder in fixtures and sundries. Of the

total amount, about \$15,840,000 is owned and the rest rented. The total annual property tax paid by the liquor traffic is estimated at about \$594,000. The total annual rentals for property capital employed and not owned is estimated at about \$1,680,000. The total number of persons, both proprietors and firm members may be put at about 17,000, and if each of these represents on the average a family of four persons, the total number of persons in the state directly dependent on the liquor traffic for their livelihood would be approximately 68,000. It is evident that the liquor traffic is about as deeply rooted and important a business in Wisconsin as it is elsewhere in the United States.

APPENDIX.

DETAILED TABLES OF STATISTICS FOR TOWNS.

TOWNS.	Licenses in Force					No License Voted				No Application.			
	No.	Popu- lation.	Area.	Po. mi.	Note.	Popu- lation.	Area.	Po. mi.	Note.	Popu- lation.	Area.	Po. mi.	Note.
ADAMS CO.—													
Adams	2	588	42	14	g								
Big Flats										550	48	11.5	c
Colburn										392	35	10.9	b
Dell Prairie						581	35	16.5	c				
Easton										487	40	12.2	bc
Jackson										589	36	16.4	c
Leola										384	36	10.7	bc
Lincoln										479	36	13.3	bc
Monroe										565	38	15.6	c
New Chester										397	36	11.	bc
New Haven										635	30	23.	b
Preston										377	36	10.5	bc
Quincy						432	45	10.	bc				
Richfield										417	36	11.6	bc
Rome						654	58	11.5	c				
Springville										568	43	13.2	c
Strongs Prairie						958	53	18.1	bc				
Totals	2	588	42	14.	....	2,625	189	13.9	....	5,888	451	13.0	....
ASHLAND CO.—													
Agenda						610	100	6.1	b				
Ashland	2	709	144	4.9	e								
Butternut										420	115	3.7	ab
Gordon						231	108	2.1	bc				
Jacobs	15	1,270	180	7.	e								
La Pointe						292	86	3.4	c				
Morse	15	1,023	72	14.2	e								
Sanborn	9	1,270	104	12.2	ae								
Totals	41	4,272	500	8.5	....	1,133	294	3.9	....	420	115	3.7	....
BARRON CO.—													
Almena	3	713	36	19.8	af								
Barron										864	36	24.	ab
Bear Lake	1	581	36	16.1	e								
Cedar Lake										275	36	7.6	b
Chetek						692	54	12.8	a				
Clinton	4	1,269	54	22.5	e								
Crystal Lake						606	36	16.8	a				
Cumberland										1,130	36	31.4	ab
Dallas										879	54	16.4	ab
Dover						941	54	17.4	bc				
Doyle										432	36	12.	b
Lakeland						522	72	7.3	bc				
Maple Grove						1,512	54	28.	bc				
Oak Grove	7	507	36	14.1	e								
Prairie Farm										1,428	54	26.5	bc
Rice Lake	5	685	32	21.4	ae								
Stanford										659	36	18.3	b
Stanley						738	36	20.5	ab				
Sumner										508	36	14.1	c
Turtle Lake										695	36	19.3	ab
Vance Creek										566	36	15.7	bc
Totals	20	3,755	194	19.3	....	5,011	306	16.4	....	7,436	396	18.8	....

Detailed tables of statistics for towns—Continued.

Towns.	Licenses in Force.					No License Voted.				No Application.			
	No.	Popu- lation.	Area.	Po. mi.	Note.	Popu- lation.	Area.	Po. mi.	Note.	Popu- lation.	Area.	Po. mi.	Note.
BAYFIELD CO.—													
Bayfield	8	421	144	2.9	g	21	62	3	bc				
Bell						270	126	2.1	bc				
Cable						520	234	2.2	bc				
Drummond										440	108	4.1	bc
Eileen	27	2,439	246	9.9	e								
Iron River	7	1,210	189	6.4	f								
Mason						482	123	3.9	bc				
Pratt	3	128	108	1.2	e								
Port Wing	1	590	110	5.4	ag								
Washburn													
Totals	46	4,788	797	6.0		1,691	565	3.0		440	108	4.1	
BROWN CO.—													
Allouez	5	720	6	12.0	ae					540	75	72.	ab
Ashwoubenon													
Bellevue	3	864	14	61.7	e								
DePere	2	893	20	44.7	ae								
Eaton	4	1,421	24	48.1	e								
Glenmore	4	1,421	33	43.2	e								
Green Bay	3	920	22	41.8	e								
Holland	4	1,257	27	46.8	e								
Howard	14	1,509	18	83.7	e								
Humboldt	5	1,043	24	47.6	e	1,048	23	45.5	ab				
Laurence													
Morrison	6	1,495	36	41.5	e								
New Denmark	6	1,474	36	41.	e	1,411	36	39.1	bc				
Pittsfield													
Preble	21	1,957	20	97.8	e	838	22	38.1	bc				
Rockland													
Scott	5	1,177	23	51.1	e								
Swamico	4	1,228	36	34.1	e								
Wrightstown	3	1,575	36	43.7	af								
Totals	89	18,685	375	49.8		3,092	121	32.9		540	75	72.	
BUFFALO CO.—													
Alma	1	655	42	15.6	ae								
Belvidere	2	742	41	18.3	ae								
Buffalo	5	694	30	23.1	ae					789	36	21.9	
Canton													
Cross	1	621	37	16.8	ae					861	36	23.9	b
Dover													
Gilmanton	4	829	36	23.1	e					787	44	17.9	bc
Glencoe													
Lincoln	2	589	36	16.3	e					666	40	16.5	bc
Maxville													
Milton	1	366	25	14.6	ae	872	36	24.2	bc				
Modena										622	33	18.8	ab
Mondovi						767	46	16.7	bc				
Montana										886	36	24.6	a
Naples													
Nelson	4	1,535	80	18.8	af								
Woumandee	2	813	44	18.5	e								
Totals	22	6,821	371	18.4		1,639	82	20.		4,611	225	20.5	
BURNETT CO.—													
Blaine						380	128	3.	bc	1,688	120	14.1	ab
Grantsburg						324	108	3.	c	703	153	4.6	c
Jackson													
Marshland						548	90	6.1	c	420	72	5.8	c
Meenon										210	36	5.8	c
Rock													
Roosevelt						1,174	36	32.6	c				
Trade Lake						1,414	141	10.0	bc				
Wood Lake													
Totals						3,840	503	7.6		3,026	381	7.9	

Detailed tables of statistics for towns—Continued.

TOWNS.	Licenses in Force.					No License Voted.				No Application.			
	No.	Popu- lation.	Area.	Po. mi.	Note.	Popu- lation.	Area.	Po. mi.	Note.	Popu- lation.	Area.	Po. mi.	Note.
CALUMET CO.—													
Brillion	4	1,563	33	43.5	ae								
Brotherstown	6	1,539	36	42.8	e								
Charlestown	4	1,313	33	37.3	ae								
Chilton						1,350	32	42.2	ab				
Harrison	13	2,022	34	59.5	ae								
New Holstein	3	1,140	34	33.5	ae								
Rantoul	3	1,299	34	38.2	ae								
Stockbridge	7	1,942	38	51.1	e								
Woodville	4	1,315	33	39.8	ae								
Totals	44	12,163	281	43.3		1,350	32	42.2					
CHIPPEWA CO.—													
Anson						697	40	17.4	b				
Arthur	2	924	104	8.9	e								
Auburn						1,186	72	6.5	ab				
Bloomer	1	1,470	75	19.6	ae								
Cleveland										577	128	4.5	bc
Colburn						513	118	4.3	bc				
Delmar	1	808	38	21.3	e								
Eagle Point	9	1,398	60	23.3	ac								
Edson	1	1,174	54	21.8	ae								
La Fayette	1	1,797	60	30.	ae								
Sampson										399	32	12.5	b
Sigel	1	911	67	13.6	ae								
Tilden	2	1,413	51	23.2	ae								
Wheaton										1,860	90	20.7	ab
Totals	18	9,895	512	19.3		2,396	230	10.4		2,836	250	11.3	
CLARK CO.—													
Beaver										622	36	17.5	bc
Colby	1	754	35	21.5	ae								
Dewhurst										190	36	5.3	e
Eaton										602	70	8.6	ab
Fremont	4	762	36	21.2	e								
Grant	4	1,277	36	35.5	e								
Green Grove													
Hewitt										354	36	9.8	bc
Hixon										292	36	8.1	bc
Hoard	2	525	36	14.6	e					541	36	15.	ab
Levis						556	36	15.5					
Loyal										995	34	29.3	a
Lynn	2	711	36	19.8	e								
Longwood										746	36	20.7	b
Mayville	2	955	35	27.1	ae								
Mead										103	72	1.4	b
Mentor	3	1,009	108	9.3	f								
Pine Valley													
Reseburg	1	615	36	17.1	o					1,130	34	33.2	ab
Sherman													
Self										615	36	17.1	bc
Sherwood Forest										132	33	3.7	b
Thorp	3	856	36	23.8	ae					231	36	6.4	b
Unity	2	855	36	23.8	e								
Warner	1	617	36	17.1	ae								
Washburn						522	36	14.5	b				
Weston													
Withee	1	1,004	36	28.9	ae					868	36	24.1	
Worden										980	36	27.2	b
York										645	36	17.9	bc
Totals	25	9,935	502	19.8		1,078	72	15.		9,046	642	14.7	
COLUMBIA CO.—													
Arlington	1	794	36	22.	e								
Caledonia										1,188	58	20.5	ab
Columbus										744	32	23.2	a
Courtland										820	35	23.4	ab
Dekorra	1	908	45	20.2	e								
Ft. Winnebago										655	35	18.1	a

Detailed tables of statistics for towns—Continued.

TOWNS.	Licenses in Force.					No License Voted.				No Application.			
	No.	Popu- lation.	Area.	Po. mi.	Note.	Popu- lation.	Area.	Po. mi.	Note.	Popu- lation.	Area.	Po. mi.	Note.
COLUMBIA CO.—Con.													
Fountain Prairie										962	36	26.7	ab
Hampden										887	36	24.6	b
Leeds	2	1,214	33	34.5	e								
Lewiston						901	51	16.7	ab				
Lodi										750	30	25.	ab
Lowville						784	36	21.8	ab				
Marcellon										882	36	24.5	a
Newport										585	20	29.2	a
Ostigo	3	1,226	35	35.	ae								
Pacific										289	20	14.4	ab
Randolph										951	36	26.4	ba
Scott										811	36	22.5	b
Springvale										751	36	20.9	ab
West Point										743	31	23.9	a
Wycocena						1,158	36	32.2	a				
Totals	7	4,142	152	47.	....	2,843	126	22.6	....	11,018	477	23.4	....
CRAWFORD CO.—													
Bridgeport	1	357	18	19.8	ae					1,635	73	22.4	ab
Clayton													
Eastman	3	1,471	78	18.9	af								
Freeman						1,533	95	16.1	bc				
Haney	2	625	36	17.3	ae								
Marietta										924	61	15.1	ab
Prairie du Chien										595	40	14.9	ab
Scott						1,004	36	27.9	b				
Seneca	3	1,200	64	18.8	af								
Utica						1,548	55	28.1	b				
Wauzeka										576	45	12.8	ab
Totals	9	3,653	193	18.6	....	4,085	186	22.	....	3,733	219	17.1	....
DANE CO.—													
Albion										1,590	35	45.1	c
Berry	2	934	36	25.9	e								
Black Earth										330	18	18.3	ab
Blooming Grove	6	1,119	25	44.7	ag								
Blue Mounds						1,048	31	30.8	bc				
Bristol	5	1,268	36	35.2	e					1,230	36	34.1	ab
Burke													
Christiana						773	35	22.	ab				
Cottage Grove						1,307	36	36.3	bc				
Cross Plains	9	1,206	36	33.5	e								
Dane										933	35	26.7	ab
Deerfield	3	1,104	34	33.5	ae								
Dunkirk						1,536	35	43.8	a				
Dunn										1,135	30	38.5	bc
Fitchburg						1,004	36	27.8	bc				
Madison						1,537	15	104.4	ab				
Mazomanie										493	30	16.5	ab
Medina						1,484	36	41.3	bc				
Middleton	11	1,510	36	43.	e								
Montrose	3	997	36	27.7	e								
Oregon													
Perry						1,050	36	29.2	c				
Primrose													
Pleasant Springs										817	36	22.7	b
Roxbury	2	966	34	28.4	e					1,453	34	42.7	
Rutland						1,297	36	36.					
Springdale						1,050	36	29.2	bc				
Sun Prairie										1,039	35	29.6	ab
Vienna						1,048	36	29.1	bc				
Verona	2	1,335	36	37.1	f								
Vermont										826	36	23.	b
Westport	2	1,472	32	46.	ae								
Windsor						1,385	36	38.5	bc				
York						943	33	26.2	b				
Totals	45	11,951	341	35.1	....	16,318	479	34.1	....	9,921	359	27.7	....

Detailed tables of statistics for towns.—Continued.

TOWNS.	Licenses in Force.					No. License Voted.				No. Application.			
	No.	Popu- lation.	Area.	Pe. mi.	Note.	Popu- lation.	Area.	Pe. mi.	Note.	Popu- lation.	Area.	Pe. mi.	Note.
DODGE CO.—													
Ashippun	3	1,339	36	37.2	e								
Beaver Dam										1,340	28	47.8	ab
Burnett						1,061	36	29.5	bc				
Calamus						1,096	35	30.4	b				
Chester										707	35	20.2	ab
Clyman	3	1,236	36	34.3	e								
Elliba						1,066	33	29.6	bc				
Emmett										1,152	33	34.9	ab
Fox Lake	1	741	33	22.5	ae								
He man	4	1,394	35	38.7	e								
Hubbard	6	1,563	34	46	ae								
Hustisford	7	1,606	35	45.9	e								
Lehanon	1	1,469	36	40.8	e								
LeRoy	6	1,314	36	37.3	e								
Lomira	6	1,569	36	43.3	ae								
Lowell										1,713	44	38.9	ab
Oak Grove	3	1,554	35	44.5	ae								
Portland	1	1,129	45	25.2	e								
Rubicou	4	1,101	36	30.6	ae								
Shields	3	868	25	34.7	e								
Theresa	2	1,433	33	39.8	ae								
Trenton										1,429	53	27.	b
Westford	2	909	30	30.3	ae								
Williamstown	2	1,015	35	29	ae								
Totals	54	20,261	560	36.2	....	3,223	108	29.9	....	6,341	193	32.8	....
DOOR CO.—													
Bailey's Harbor	5	645	27	23.9	e								
Brussels	6	1,287	33	35.8	e								
Clay Banks										557	15	37.1	b
Egg Harbor	3	882	38	23.2	e								
Forestville	4	1,364	36	38.	e								
Gardner	4	785	35	22.4	g								
Gibraltar						1,185	38	31.2	bc				
Jacksonport	2	913	27	33.8	e								
Liberty Grove	3	1,550	60	25.8	g								
Nasewaupee	3	1,349	43	31.3	ae								
Sevastopol	5	1,007	50	32.2	ae								
Sturgeon Bay										585	20	19.3	ab
Union	2	639	23	27.8	e								
Washington						863	23	37.5	c				
Totals	37	11,021	375	29.9	...	2,048	61	33.6	....	1,142	35	32.6	....
DOUGLAS CO.—													
Brule	18	1,125	210	5.3	ae								
Gordon										403	540	.7	bc
Nebagamon	18	2,271	250	9.1	e								
Superior	8	1,445	298	4.8	ae								
Totals	44	4,841	758	6.4	...					403	540	.7	....
DUNN CO.—													
Colfax						1,083	36	30.1	a				
Dunu						1,410	55	25.6	bc				
Eau Galle						1,347	48	28	c				
Elk Mound						812	36	22.5	bc				
Grant										697	36	18.5	....
Hay River	2	501	36	13.9	e								
Lucas										885	36	24.6	....
Menomonie										1,849	43	43.	ab
New Haven						620	36	17.2	bc				
Otter Creek										337	36	9.4	bc
Peru										375	18	20.8	c
Red Cedar	1	1,484	41	36.2	ae								
Rock Creek										646	36	17.9	c
Sand Creek						609	36	16.9	bc				

Detailed tables of statistics for towns—Continued.

TOWNS.	Licenses in Force.					No License Voted.				No. Applications			
	No.	Popu- lation.	Area.	Po. mi.	Note.	Popu- lation.	Area.	Po. mi.	Note.	Popu- lation.	Area.	Po. mi.	Note.
DUNN CO.—Con.													
Sheridan						599	36	15.8	b				
Sherman										780	36	21.6	b
Spring Brook										1,287	60	21.4	b
Stanton						1,110	36	30.8	bc				
Tainter										479	40	12.0	bc
Tiffany	4	1,219	36	33.8	f								
Weston										867	42	20.6	
Wilson	2	452	36	12.5	g								
Totals	9	3,656	149	24.5		7,560	319	23.7		8,172	385	21.4	
EAU CLAIRE CO.—													
Bridge Creek										1,280	108	11.8	ab
Brunswick						714	36	19.8	a				
Clear Creek										758	36	21.1	b
Drammen										721	36	20	
Fairchild										658	36	18.8	b
Lincoln	6	1,731	63	27.5	e								
Ludington										874	90	9.7	bc
Oter Creek										729	36	20.3	b
Pleasant Valley						1,000	54	18.5					
Seymour										559	36	15.5	ab
Union						905	34	26.6	a				
Washington										1,322	66	20	ab
Totals	6	1,731	63	27.5		2,619	124	20.3		6,901	443	15.6	
FLORENCE CO.—													
Florence	12	1,824	260	7.0	e								
Commonwealth	2	828	131	6.3	e								
Homestead						545	90	6.1	bc				
Totals	14	2,652	391	6.8		545	90	6.1					
FOND DU LAC CO.—													
aito										1,290	36	35.8	b
Ashford	5	1,120	35	32	ae								
Auburn	4	1,417	36	39.3	e								
Byron						1,234	36	34.3	bc				
Calumet	13	1,443	29	50	e								
Eden	6	1,393	36	39.7	e								
Eldorado						1,363	36	37.9	bc				
Empire						865	30	28.8	b				
Fond du Lac	4	568	30	18.9	ae								
Forest	3	1,206	36	33.5	e								
Friendship	4	464	18	25.7	ae								
Lamartine						1,223	36	34	b				
Marshfield	16	1,992	36	55.2	e								
Metomen	3	1,194	35	31.1	ae								
Oakfield	1	823	55	23.5	ag								
Oseota	5	1,077	36	30	e								
Ripon										1,067	32	36.4	ab
Rosendale										1,106	36	30.7	c
Springvale						1,189	36	33	b				
Taycheedah	6	1,293	32	40.5	e								
Waupun										1,170	35	33.4	ab
Totals	70	13,990	394	35.5		5,874	174	33.7		4,633	139	33.3	
FOREST CO.—													
Caswell						65	290	2	bc				
Crandon						454	180	2.5	bc				
Hiles										135	190	7	bc
Laona	2	286	138	2.7	g								
North Crandon	4	114	170	.7	e								
Wabeno	10	342	114	3	e								
Totals	16	742	422	1.8		519	470	1.1		135	190	7	

Detailed tables of statistics for towns—Continued.

TOWNS.	Licenses in Force.					No License Voted.				No Application.			
	No.	Popu- lation.	Area.	Po. mi.	Note.	Popu- lation.	Area.	Po. mi.	Note.	Popu- lation.	Area.	Po. mi.	Note.
RUSK CO.—													
Atlanta										740	150	4.9	'bc
Big Bend	1	404	42	3.6	e								
Dewey	2	156	72	2.1	e								
Flambeau										82	80	1.0	ab
Grant	1	121	72	1.7	ae								
Hawkins & Lawrence	6	490	144	3.3	e								
Marshall										54	72	0.7	bc
Rusk										227	36	6.3	b
Strickland										238	60	4.0	bc
Stubbs	4	760	41	18.5	e								
Thornapple	2	262	92	2.8	ae								
True	3	303	72	4.2	e								
Totals	19	2,499	535	4.7						1,341	398	3.4	
GRANT CO.—													
Beetown	3	1,207	48	25.7	e					630	40	15.7	bc
Bloomington										138	10	13.8	ab
Boscobel										643	42	15.3	ab
Cassville										693	36	19.2	bc
Castle Rock						1,055	36	29.4	bc				
Clifton						828	36	23.	bc				
Ellenboro						795	35	22.7	ab				
Fennimore													
Glen Haven	5	819	37	22.1	e					992	36	27.5	b
Harrison										1,160	36	32.2	ab
Hazel Green										686	36	19.0	b
Hickory Grove													
Jamestown	10	978	31	31.5	e					1,659	72	23.1	ab
Lancaster													
Liberty	2	870	36	24.2	o					1,051	36	29.2	
Lima										566	36	15.7	b
Little Grant										566	35	16.2	b
Marion										268	21	12.7	bc
Millville													
Mt. Hope						671	36	18.6	bc				
Mt. Ida										793	36	22.	bc
Muscoda										454	33	13.8	ab
Paris	2	792	36	22.	e								
Patch Grove						660	33	20.0	bc				
Platteville										879	36	24.6	ab
Potosi	5	1,568	56	28.	ae								
Smelser	3	923	36	25.6	ae								
Waterloo						966	42	23.0	bc				
Watestown	2	474	29	16.4	f								
Wingville										854	36	23.7	a
Woodman	2	438	27	16.2	e								
Wyalusing	2	918	42	21.9	e								
Totals	36	8,987	378	23.8		4,975	218	22.8		12,032	577	20.9	
GREEN CO.—													
Adams										854	36	23.7	
Albany										699	32	21.8	c
Brooklyn						1,188	38	31.3	bc				
Cadiz										1,240	35	35.5	
Clarno										1,226	35	35.	b
Decatur										650	35	18.6	a
Exeter	2	917	36	25.5	ae					1,184	36	32.9	c
Jefferson										966	36	26.8	b
Jordan													
Monroe	1	942	34	27.7	ae								
Mt. Pleasant										761	35	21.8	ab
New Glarus										525	36	14.6	ab
Spring Grove						1,021	36	28.4					
Sylvester										909	36	25.2	b
Washington										768	36	21.4	bc
York						1,036	36	28.8					
Totals	3	1,859	70	26.5		3,245	110	29.9		9,782	288	34.	

Detailed tables of statistics for towns—Continued.

TOWNS.	Licenses in Force.					No License Voted.				No Application.			
	No.	Popu- lation.	Area.	Pop. mi.	Note.	Popu- lation.	Area.	Pop. mi.	Note.	Popu- lation.	Area.	Pop. mi.	Note.
JEFFERSON CO.—Con													
Jefferson	4	1,729	44	39.3	ae								
Koshkonong	1	1,475	45	32.8	ae								
Lake Mills	1	1,331	32	41.6	ae								
Milford	6	1,271	35	36.3	e								
Oakland										1,287	36	35.8	b
Palmyra	4	789	35	22.5	af								
Sullivan	4	1,239	36	34.4	e								
Sumner						555	18	30.8	b				
Watertown										1,563	39	40.	ab
Totals	29	14,662	415	35.3		555	18	30.8		2,850	75	38.	
JUNEAU CO.—													
Armenia										801	77	10.4	bc
Clearfield										531	36	14.7	b
Cutler						877	66	5.7	bc				
Finley										201	36	5.6	bc
Fountain	3	956	32	29.9	f								
Germantown	1	609	45	13.5	e								
Kildare										605	29	20.8	a
Kingston										296	42	7.0	bc
L'emonweir										1,174	45	26.1	ab
Lindina						1,036	34	30.5	a				
Lisbon										576	30	19.2	ab
Lyndon										572	29	19.7	c
Marion						418	23	18.2	b				
Necedah	9	1,821	85	21.5	e								
Orange										561	36	15.6	ab
Plymouth										867	34	25.5	ab
Seven Mile Creek										812	36	22.5	ab
Summit										1,015	36	28.2	b
Wonewoc	1	1,407	35	40.2	af								
Totals	14	4,793	197	24.3		1,831	123	14.9		8,011	466	17.2	
KENOSHA CO.—													
Brighton	2	850	36	23.6	e								
Bristol						1,151	36	32.	bc				
Paris						818	36	22.7	b				
Pleasant Prairie	4	1,776	43	41.3	ag								
Randall	2	784	22	35.6	g								
Salem	9	1,846	34	54.3	g								
Somers	3	2,044	42	48.7	ag								
Wheatland	7	832	24	34.7	f								
Totals	27	8,132	201	40.5		1,969	72	27.4					
KEWAUNEE CO.—													
Ahnapee	3	1,196	33	36.2	ae								
Carlton	6	1,462	36	40.6	e								
Casco	6	1,314	36	37.1	e								
Franklin	4	1,482	36	41.2	e								
Lincoln	6	1,250	36	34.7	e								
Luxemburg	12	1,693	36	47.0	e								
Montpelier	5	1,547	36	42.9	e								
Pierce	2	748	19	39.3	ae								
Red River	6	1,367	34	40.2	e								
W. Kewaunee	8	1,622	38	42.7	ae								
Totals	58	13,701	340	40.3									
LA CROSSE CO.—													
Bangor	1	659	35	18.8	ae								
Barre	3	548	21	26.1	e								
Burns													
Campbell	11	1,078	33	35.7	ae	1,076	50	21.5	ab				
Farrington	5	1,880	75	25.1	e								
Greenfield	3	729	30	24.3	e								
Hamilton										1,427	55	26.	

Detailed tables of statistics for towns—Continued.

TOWNS.	Licenses in Force.					No License Voted.				No. Application.			
	No.	Popu- lation.	Area.	Po. mi.	Note.	Popu- lation.	Area.	Po. mi.	Note.	Popu- lation.	Area.	Po. mi.	Note.
MANITOWOC CO.—													
Con.													
Gibson	4	1,498	35	42.7	e								
Koosuth	8	1,739	40	45.	e								
Liberty	6	1,383	33	38.4	e								
Manitowoc	3	762	13	58.6	ae								
Manitowoc Rapids	14	1,717	36	47.7	ae								
Maple Grove	4	1,214	36	33.7	ae								
Meemece	8	1,482	36	41.2	e								
Mishicot	12	1,578	30	52.6	e								
Newton	9	1,770	34	52.1	e								
Rockland	5	1,248	36	34.7	ae								
Schleswig	5	1,385	35	39.6	ae								
Two Creeks	2	632	15	42.1	e								
Two Rivers	5	1,087	34	32.0	ae								
Totals	125	25,276	586	43.2									
MARATHON CO.—													
Bergen	3	552	64	8.6	e								
Berlin	1	1,078	36	30	e								
Born	1	262	36	7.3	ae								
Brighton	2	599	36	16.6	e								
Cassel	3	1,034	35	29.5	ae								
Cleveland	6	1,030	36	29.4	ae								
Day	4	821	52	15.8	e								
Easton	1	827	43	19.2	e								
Eau Claire	2	735	36	20.4	e								
Eldron	3	442	39	12.3	e								
Emmett	4	786	51	15.4	e								
Frankfort	2	568	36	15.8	e								
Franzen	1	126	33	3.2	e								
Halsey										328	36	9.1	ab
Hamburg	3	891	33	24.7	e								
Harrison	2	211	36	5.8	e								
Hewitt	1	287	42	6.8	e								
Holton	1	1,022	36	20.4	ae								
Hull	3	796	36	22.1	e								
Johnson	2	543	36	15.	ae								
Knowlton	2	435	64	6.8	ae								
Kronenwetter	2	434	58	7.5	e								
McMillan	4	852	24	35.4	e								
Maine	5	1,119	54	20.7	ae								
Marathon	2	678	35	19.4	ae								
Mosinee	2	371	32	11.6	ac								
Norrie	4	770	36	21.4	e								
Pike Lake	3	1,022	84	12.2	e								
Plover										302	36	8.4	ab
Rib Falls	3	771	36	21.4	e								
Rietbrock	2	1,016	36	28.3	ae								
Ringle	1	424	36	11.8	e								
Spencer													
Stettin	4	1,110	36	30.8	e					432	36	12.	ab
Texas	1	695	52	13.4	ae								
Wausau	2	1,109	36	30.8	ae								
Weston	9	1,090	70	15.6	ae								
Wien	2	965	35	27.5	e								
Totals	93	25,501	1479	17.2						1,062	108	9.8	
MARINETTE CO.													
Amberg	23	1,375	232	5.9	e								
Crivitz	8	842	144	5.8	e								
Dunbar						1,136	216	5.3	bc				
Grover	4	1,830	64	29.1	e								
Pound	8	2,122	90	23.6	ae								
Portersfield	9	956	90	10.6	ae								
Wausaukee	12	1,685	163	10.1	e								
Peshtigo	12	1,910	350	5.5	ae								
Totals	76	10,750	1036	10.4		1,136	216	5.3					

Detailed tables of statistics for towns—Continued.

TOWNS.	Licenses in Force.					No License Voted.				No Application.			
	No.	Popu- lation.	Area.	Po. mi.	Note.	Popu- lation.	Area.	Po. mi.	Note.	Popu- lation.	Area.	Po. mi.	Note.
MARQUETTE CO.—													
Buffalo										839	36	23.3	c
Crystal Lake										577	36	16.0	b
Douglas	1	684	39	22.8	e								
Harris	2	556	31	17.9	e								
Mecan										628	28	22.4	b
Montello										343	35	9.8	a
Mou idville						562	36	15.6	bc				
Neshkoro.	5	638	24	26.6	e								
Newton										647	36	18.	b
Oxford										659	36	18.3	bc
Packwankee						852	40	21.3	bc				
Shields	1	698	31	22.5	e								
Springfield										644	36	17.9	bc
Westfield	2	451	31	14.5	ae								
Totals	11	8,027	147	22.3		1,114	76	18.6		4,337	243	17.8	
MILWAUKEE CO.—													
Franklin	8	1,738	36	48.2	e								
Granville	15	2,267	35	64.8	ae								
Greenfield	49	4,980	35	142.	ae								
Lake	43	5,302	20	266.	ae								
Milwaukee	39	4,106	19	216.	ae								
Oak Creek	18	1,950	29	67.2	ae								
Wauwatosa	73	12,200	29	421.	ae								
Totals	245	32,543	275	118.									
MONROE CO.—													
Ardrian						710	36	19.7		631	36	17.5	
Anglo						825	36	22.9	bc				
Byron													
Ciifton	2	993	33	27.6	e								
Glendale										1,051	36	29.2	ab
Grant										499	36	13.9	bc
Greenfield						712	36	15.8	c				
Jefferson	4	1,223	36	33.9	ae								
Lafayette										438	36	12.2	bc
La Grange										1,141	36	31.7	a
Leon						787	33	21.9	bc				
Lincoln										863	36	24.	c
Little Falls	1	1,222	68	17.9	g								
New Lyme										206	36	5.7	b
Oakdale	1	682	36	18.9	e								
Portland						1,194	33	33.2	bc				
Ridgeville										924	35	26.4	a
Scott										258	36	16.1	c
Sheldon						821	36	22.8	b				
Sparta										1,263	52	24.3	ab
Tomah										744	35	21.3	ab
Wellington										1,091	36	30.3	a
Welis										717	36	19.9	b
Wilton										895	35	25.6	ab
Totals	8	4,120	176	23.4		5,049	216	25.4		10,721	517	20.7	
OCONTO CO.—													
Armstrong	4	482	312	1.5	e								
Breed	2	268	36	7.4	e								
Brazeau	2	437	72	6.1	e								
Chase													
Gillette										825	36	23.	b
Howe	9	815	36	22.6	e					831	36	23.2	ab
Lena	11	894	36	24.8	e								
Little River	4	1,042	48	21.7	e								
Little Saamico	6	944	37	25.5	e								
Maple Valley										870	72	12.1	
Morgan	2	648	36	18.	e								
Oconto	2	1,042	42	24.8	ae								

Detailed tables of statistics for towns—Continued.

TOWNS.	Licenses in Force.					No License Voted.				No Application.			
	No.	Popu- lation.	Area.	Po. mi.	Note.	Popu- lation.	Area.	Po. mi.	Note.	Popu- lation.	Area.	Po. mi.	Note.
OCONTO CO.—Con.													
Oconto Falls										358	36	9.9	ab
Pensaukee	5	1,768	74	23.9	e								
Spruce	5	1,029	36	28.5	e								
Stiles	5	897	36	24.9	e								
Totals	57	10,266	801	12.8						2,888	180	16.0	
ONEIDA CO.—													
Cassian										225	90	2.5	bc
Crescent	3	237	33	7.2	e								
Gagen	6	554	171	3.2	e								
Hazellhurst	1	1,153	234	4.9	e								
Jayne						45	144	3	bc				
Mouico*	3				e								
Newbold	1	258	129	2.0	ae								
Pelican										461	104	4.4	ab
Pine Lake*										485	115	4.2	ab
Sugar Camp													
Schoepke	8	299	108	2.8	e					160	16	4.4	bc
Woodboro													
Totals	21	2,501	675	3.7		45	144	0.3		1,331	345	3.9	
OUTAGAMIE CO.—													
Black Creek	2	937	36	26.1	ae					542	36	15.0	ab
Bovina													
Buchanan	9	2,096	24	87.3	ae								
Center	7	1,458	36	40.4	e								
Cicero										1,103	36	30.6	b
Dale	7	1,273	30	42.4	e								
Deer Creek						882	36	24.5	ab				
Ellington	1	1,188	36	32.9	e								
Freedom	4	1,664	36	46.2	e								
Grand Clute	4	1,722	35	49.3	ae								
Greenville	3	1,342	36	37.3	e								
Hortonia										654	22	29.7	ab
Kaukauna										765	18	42.5	ab
Liberty										599	32	18.7	ab
Maine						616	36	17.1	c				
Maple Creek	1	800	22	36.3	ae								
Osborne										656	16	41.0	ab
Seymour	4	1,141	32	25.7	ae								
Vandenbrock										714	12	59.5	ab
Totals	42	13,621	323	42.2		1,498	72	20.8		5,023	172	29.3	
OZAUKEE CO.—													
Belgium	11	1,547	36	42.9	e								
Cedarburg	7	1,450	29	50.0	ae								
Fredonia	11	1,652	36	45.9	e								
Grafton	1	1,060	22	48.2	ae								
Mequon	18	2,792	48	58.2	e								
Pt. Washington	2	1,081	21	51.4	ae								
Saukville	10	1,667	36	45.3	e								
Totals	60	11,249	228	49.3									
PEPIN CO.—													
Albany										650	36	18.0	
Dorand										267	20	13.4	a
Frankfort										877	30	29.2	bc
Lima										743	36	20.6	c
Pepin	3	1,142	47	24.3	e								
Stockholm										430	16	26.9	ab
Waterville						1,522	34	44.8	ab				
Waubeek										168	12	14.0	a
Totals	3	1,142	47	24.3		1,522	34	44.8		3,135	150	20.9	

* Not reported.

Detailed tables of statistics for towns—Continued.

TOWNS.	Licenses in Force.					No License Voted.				No. Application.			
	No.	Popu- lation.	Area.	Po. mi.	Note.	Popu- lation.	Area.	Po. mi.	Note.	Popu- lation.	Area.	Po. mi.	Note.
PIERCE CO.—													
Clifton.....										631	36	17.5	a
Diamond Bluff.....						506	17	29.7	bc				
Ellsworth.....										1,481	36	41.2	a
El Paso.....						1,084	36	30.1	bc				
Gilm in.....						1,378	36	38.3	c				
Hartland.....										1,182	36	32.8	bc
Isabelle.....						447	10	44.7	bc				
Maiden Rock.....										1,187	41	29.0	ab
Martell.....						1,277	36	35.5	c				
Oak Grove.....										788	40	19.7	a
River Falls.....										1,254	46	27.3	a
Rock Elm.....						1,270	36	35.3	bc				
Salem.....										1,081	36	32.8	bc
Spring Lake.....						1,200	36	33.4	c				
Trenton.....	4	965	26	37.1	f								
Trimbelle.....										1,505	36	41.8	bc
Union.....	4	1,478	36	41.1	e								
Totals.....	8	2,443	62	39.4	....	7,162	207	34.6	....	9,109	307	29.7	....
POLK CO.—													
Alden.....						1,440	60	24.0	bc				
Apple River.....										512	36	14.2	bc
Balsam Lake.....	2	757	36	21.0	g					506	36	13.9	ab
Beaver.....										899	36	25.0	....
Black Brook.....										166	36	48.8	bc
Bone Lake.....													
Clam Falls.....	2	340	36	9.2	f					752	36	20.9	....
Clayton.....	3	836	36	23.2	ae					1,042	52	20.0	bc
Clear Lake.....													
Eureka.....										1,042	52	20.0	bc
Farmington.....	1	1,059	45	25.7	f								
Garfield.....						831	36	18.1	bc				
Georgetown.....										211	36	5.9	....
Johnstown.....										138	36	3.8	c
Laketown.....						811	36	22.5	bc				
Lincoln.....						1,010	42	24.0	ab				
Lorraine.....										267	36	7.4	b
Luck.....						526	36	14.6	c				
McKinley.....										110	36	3.1	c
Milltown.....						671	36	18.6	bc				
Osceola.....						847	42	20.2	ab				
St. Croix Falls.....										361	34	10.6	ab
Sterling.....	2	735	65	11.3	e					89	36	2.5	ab
W. Sweden.....													
Totals.....	10	2,727	218	12.5	....	6,136	288	21.3	....	5,252	446	11.8	...
PORTAGE CO.—													
Alban.....						878	36	24.4	bc				
Almond.....						1,080	36	30.0	c				
Amherst.....	5	1,425	35	40.7	ag								
Belmont.....						781	36	21.7	....			
Buena Vista.....						1,102	55	20.0	bc				
Carson.....	6	1,505	60	25.1	ae								
Dewey.....	2	754	47	14.0	e								
Eau Claire.....										1,086	58	18.7	b
Grant.....	1	557	51	10.3	e								
Hull.....	2	1,469	40	36.7	ae								
Lanark.....										825	36	22.9	bc
Linwood.....										677	32	21.2	ab
New Hope.....						962	36	26.7	bc				
Pine Grove.....						565	36	18.7	bc				
Plover.....	7	1,611	73	22.1	ae								
Sharon.....	10	2,225	72	30.9	e								
Stockton.....	10	1,899	36	52.5	e								
Totals.....	43	11,445	417	27.5	....	5,368	255	22.8	....	2,588	126	20.5	....

Detailed tables of statistics for towns—Continued.

TOWNS.	Licenses in Force,					No License Voted.				No Application.			
	No.	Popu- lation.	Area.	Po. mi.	Note.	Popu- lation.	Area.	Po. mi.	Note.	Popu- lation.	Area.	Po. mi.	Note.
SHAWANO CO.—Con.													
Germania										308	36	8.5	bc
Grant	3	1,169	36	32.4	e								
Green Valley	6	1,037	36	28.8	e								
Hartland	6	1,442	36	40.0	e								
Herman	8	1,111	4	20.6	e								
Hutchins										630	36	17.5	ab
Lessor	1	1,111	36	30.9	e								
Maple Grove						1,814	33	50.4	bc				
Morris						689	36	19.1	bc				
Navarino										413	36	11.5	b
Pella	2	930	36	25.8	e								
Richmond	2	823	32	25.7	ae								
Seneca	2	515	36	14.6	e								
Washington	6	1,322	37	35.7	e								
Waukechon	2	940	36	26.1	ae								
Wescott										282	24	11.7	ab
Wittenberg	1	1,011	36	28.1	ae								
Totals	57	16,076	627	25.7	...	2,503	72	31.8	....	2,165	166	13.0	....
SHEBOYGAN CO.—													
Greenbush	3	1,639	48	35.2	e								
Herman	9	1,940	36	53.8	e								
Holland	5	2,551	44	53.0	e								
Lima	6	1,949	36	54.1	e								
Lyndon	11	1,732	36	48.2	e								
Mitchell	2	974	36	27.1	e								
Mosel	4	885	22	40.2	e								
Plymouth										1,398	36	38.9	ab
Rhine	1	1,285	36	35.7	e								
Russell	1	437	24	18.2	e								
Scott	5	1,432	36	39.8	e								
Sheboygan	14	2,181	23	94.8	e								
Sheboygan Falls	4	1,690	36	46.9	e								
Sherman	15	1,813	36	50.3	e								
Wilson	3	1,078	25	43.1	e								
Totals	83	21,636	474	45.7	....					1,398	36	38.9	....
TAYLOR CO.—													
Aurora										106	108	1.0	b
Browning	1	370	36	10.3	e								
Chelsea	5	787	42	18.7	e								
Cleveland	3	231	108	2.1	e								
Deer Creek	4	775	36	21.5	e								
Greenwood										394	51	7.9	bc
Grover	1	333	72	4.6	e								
Goodrich										216	33	6.0	b
Hammel	1	389	36	10.8	e								
Holway	1	308	72	4.3	e								
Little Black	6	1,331	36	37.0	e								
Medford	5	1,394	40	34.9	ae								
Moliter						112	36	3.1	b				
Rib Lake										572	80	7.1	ab
Westboro	8	1,060	198	5.	f								
Totals	35	6,978	676	10.3	....	112	36	3.1	....	1,288	275	4.7	....
TREMPEALEAU CO.													
Albion										756	36	21.0	a
Arcadia										2,641	120	22.0	ab
Burnside										938	36	26.1	a
Caledonia						345	22	15.7	b				
Chimney Rock										963	36	26.7	c
Dodge	4	495	21	23.6	e								
Etrick						1,969	76	25.9	c				
Gale										1,384	62	22.3	ab
Hale										1,773	70	25.3	c
Lincoln										786	30	26.2	a

Detailed tables of statistics for towns—Continued.

TOWNS.	Licenses in Force.					No License Voted.				No Application.			
	No.	Popu- lation.	Area.	Po. mi.	Note.	Popu- lation.	Area.	Po. mi.	Note.	Popu- lation.	Area.	Po. mi.	Note.
TREMPEALEAU CO.—													
—Continued.													
Pigeon										1,209	38	31.8	c
Preston										1,693	60	28.2	a
Sumner										767	36	21.3	a
Trempealeau										1,152	56	20.6	ab
Unity						989	36	27.5	c				
Totals	4	495	21	23.6		3,303	134	24.7		14,062	580	24.3	
VERNON CO.—													
Bergen	1	804	50	16.1	ae								
Christiana						1,264	36	55.1	c				
Clinton										1,214	36	33.7	bc
Coon						1,324	36	33.8	bc				
Forest						1,250	36	34.7	bc				
Franklin										1,237	52	23.8	
Genoa	1	1,077	36	29.9	g								
Greenwood										1,027	36	28.6	
Hamburg						1,070	36	29.7	bc				
Harmony										1,108	42	26.3	b
Hillsboro										1,182	36	32.8	ab
Jefferson										1,548	48	32.3	c
Kickapoo						874	38	23.0	c				
Liberty										539	23	23.4	
Stark						907	35	25.9	bc				
Sterling										1,187	48	24.7	bc
Union										849	36	23.6	
Viroqua						1,862	48	38.8	c				
Webster										1,123	36	31.2	c
Wheatland						668	28	23.8	a				
Whitestown	1	914	35	26.1	e								
Totals	3	2,795	121	23.1		9,219	293	31.5		11,014	393	28.0	
VILAS CO.—													
Arbor Vitae						1,618	180	9.0	bc				
Eagle River	12	1,356	495	2.7	e								
Flambeau						352	144	2.4	b				
Minocqua	11	942	144	6.5	e								
Totals	26	2,298	639	3.6		1,970	324	6.1					
WALWORTH CO.—													
Bloomfield										672	35	19.2	bc
Darien	3	1,371	36	38.1	f								
Delevan	*9	993	35	28.4	ae								
East Troy	2	900	35	25.7	ae								
Geneva										1,191	34	35.1	ab
LaFayette										924	36	25.7	ab
La Grange										882	36	24.5	b
Linn						1,082	35	30.9	b				
Lyons	3	1,298	36	36.1	af								
Richmond										776	36	21.4	bc
Sharon										1,127	35	32.2	ab
Spring Prairie						1,126	36	31.3	bc				
Sugar Creek										931	35	26.6	ab
Troy	2	1,018	36	28.3	e								
Walworth	5	1,290	36	35.8	f								
Whitewater										806	34	23.7	ab
Totals	24	6,870	214	32.1		2,208	71	31.1		7,303	281	26.0	
WASHBURN CO.—													
Bashaw										581	95	6.1	b
Brooklyn										124	38	3.3	bc
Chicog										94	36	2.6	b
Casey										154	46	3.3	b

* Open summer only.

Detailed tables of statistics for towns—Continued.

TOWNS.	Licenses in Force.					No License Voted.				No Application.			
	No.	Popu- lation.	Area.	Po. mi.	Note.	Popu- lation.	Area.	Po. mi.	Note.	Popu- lation.	Area.	Po. mi.	Note.
WASHBURN CO.—													
Continued.													
Gull Lake										91	36	2.6	b
Long Lake	1	531	54	4.3	e								
Loomis	2	368	90	4.1	e								
Mills	3	363	40	9.2	e								
Micong	3	406	144	2.8	e								
Sarona	1	146	36	4.1	e								
Shell Lake	8	1,002	31	32.3	e								
Spooner										334	66	4.6	ab
Stinnett										223	108	2.1	bc
Veazie	2	278	36	7.7	e								
Totals	20	2,799	431	6.5	....					1,580	425	3.7	....
WASHINGTON CO.—													
Addison	16	1,810	36	50.2	e								
Barton	8	1,260	24	52.4	ae								
Erin	4	1,200	36	33.3	e								
Farmington	5	1,461	36	40.5	e								
Germantown	13	1,937	36	53.7	e								
Hartford	3	1,354	35	38.7	ae								
Jackson	4	1,760	36	48.8	e								
Kewaskum										851	24	35.5	ab
Polk	4	1,554	36	43.2	ae								
Richfield	10	1,617	36	44.8	e								
Trenton	8	1,572	36	43.7	e								
Wayne	5	1,319	36	38.6	e								
West Bend	9	843	22	38.3	ae								
Totals	89	17,759	405	43.8	....					851	24	35.5	....
WAUKESHA CO.—													
Brookfield	14	2,174	36	60.4	e								
Delafield	9	1,250	36	34.7	ae								
Eagle										744	35	21.3	ab
Genesee	4	1,481	36	41.2	e								
Lisbon	5	1,510	36	41.9	e								
Menomonie	8	2,178	36	60.5	ae								
Merton	12	1,530	36	42.5	e								
Mukwonago	5	1,263	36	35.1	e								
Muskego	15	1,349	36	57.5	e								
New Berlin	6	1,579	36	43.8	e								
Oconomowoc	8	1,300	36	36.9	ae								
Ottawa	2	883	36	24.5	e								
Pewaukee	4	1,708	36	47.4	ae								
Summit	1	1,275	36	35.4	ao								
Vernon										1,307	36	38.0	bc
Waukesha						1,015	36	28.2	ab				
Totals	93	19,510	468	41.7	....	1,015	36	28.2	....	2,051	71	28.9	....
WAUPACA CO.—													
Bear Creek	1	1,257	36	34.9	e								
Caledonia	3	904	28	32.3	e								
Dayton										891	36	24.7	....
Farmington										1,013	34	29.8	ab
Fremont						1,522	36	42.3	a	425	20	21.2	ab
Harrison						453	36	12.6	bc	518	36	14.4	b
Helvetia						804	36	22.3	c				
Iola										1,398	35	40.0	ab
Larrabee										939	26	26.1	ab
Lebanon						1,096	36	50.5	....			
Lind										1,421	34	41.7	ab
Little Wolf										867	36	24.1	ab
Matteson										956	33	29.0	ab
Mukwa													
Royalton	3	1,272	36	35.3	ae								

Detailed tables of statistics for towns—Continued.

Towns.	Licenses in Force.				No License Voted.				No Application.				
	No.	Popu- lation.	Area.	Per mi.	Note.	Popu- lation.	Area.	Per mi.	Note.	Popu- lation.	Area.	Per mi.	Note.
WAUPACA CO.—Con.													
St. Lawrence						1,178	26	32.7	c				
Scandinavia										921	36	25.6	bc
Union	3	1,309	36	36.3	e					900	32	30.0	ab
Waupaca													
Weyauwega						579	23	25.2	ab				
Wyoming	4	479	36	13.8	e								
Totals	14	5,239	172	30.4		5,622	203	27.7		10,309	368	28.0	
WAUSHARA CO.—													
Aurora						1,025	36	39.5	bc				
Bloomfield	4	1,256	36	34.9	e								
Coloma	3	827	36	23.0	e								
Dakota	1	543	36	15.1	e								
Deerfield										656	36	18.2	b
Hancock										650	36	18.1	ab
Leon										826	36	22.9	bc
Marion						654	26	18.2	bc				
Mt. Morris										658	36	18.2	c
Oasis										826	36	22.9	c
Plainfield										921	36	25.6	a
Poysippi						1,046	33	31.7	bc				
Richford	1	591	36	16.4	e								
Rose										423	36	12.0	c
Saxeville										827	36	23.0	bc
Springwater						653	36	18.1					
Warren	6	476	36	13.5	af								
Wautoma										456	36	12.1	ab
Totals	15	3,693	180	20.5		3,378	141	23.9		6,233	324	19.2	
WINNEBAGO CO.—													
Algoma	1	840	19	43.2	ae								
Black Wolf	1	778	17	45.8	e								
Clayton						1,161	36	32.3	bc				
Menasha	1	646	15	43.0	ae								
Neeah										533	15	35.6	ab
Nekimi						990	30	33.0	b				
Nepenskum										939	29	32.4	c
Omro										1,163	28	41.5	ab
Oshkosh	2	1,812	19	95.5	ae								
Poygan										742	24	30.9	b
Rushford						1,652	35	47.2	c				
Utica						967	36	26.8	c				
Vinland										1,018	29	35.0	bc
Winchester										1,041	36	28.9	b
Winneconne	2	746	27	27.6	ae								
Wolf River	3	970	32	30.3	e								
Totals	10	5,792	129	44.8		4,770	137	34.8		5,436	161	33.7	
WOOD CO.—													
Arpin	2	675	36	18.7	e								
Auburndale										959	36	26.6	ab
Cameron										200	9	22.2	ab
Cary	1	169	36	4.7	e								
Cranmoor										213	44	4.8	bc
Dexter						458	36	12.4	bc				
Grand Rapids	6	825	33	25.0	ae								
Hansen (Vesper)	2	665	36	18.4	e								
Hiles	1	104	36	2.9	e								
Lincoln	3	1,128	36	31.4	ae								
Marshfield	5	881	18	49.0	ae								
Milladore	9	1,025	36	28.5	e								
Pt. Edwards										582	43	13.5	a
Remington	4	638	72	8.9	e								
Richfield	1	571	36	15.8	e								
Rock													
Rudolph	3	1,046	31	33.7	ae	823	56	22.9	bc				

Detailed tables of statistics for towns—Continued.

TOWNS.	Licenses in Force.					No License Vcted.				No Application.			
	No.	Popu- lation.	Area.	Po. mi.	Note.	Popu- lation.	Area.	Po. mi.	Note.	Popu- lation.	Area.	Po. mi.	Note.
WOOD CO.—Con.													
Saratoga.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	416	49	8.5	bc
Seneca.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	331	30	11.0	ab
Sherry.....	1	618	36	17.1	e	.....	.....	.....	.....	.....	.....	.....	.....
Sigel.....	2	1,483	36	41.2	ae	.....	.....	.....	.....	.....	.....	.....	.....
Vespar (Hansen).....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Wood.....	1	457	34	13.4	e	.....	.....	.....	.....	.....	.....	.....	.....
Totals.....	41	10,285	512	20.1	.....	1,281	72	17.8	.....	2,701	211	12.8	.....

PART IV.

THE HOUSING PROBLEM IN WISCONSIN

Inspection and Report in compliance with Chapter 203,
Laws of 1903.

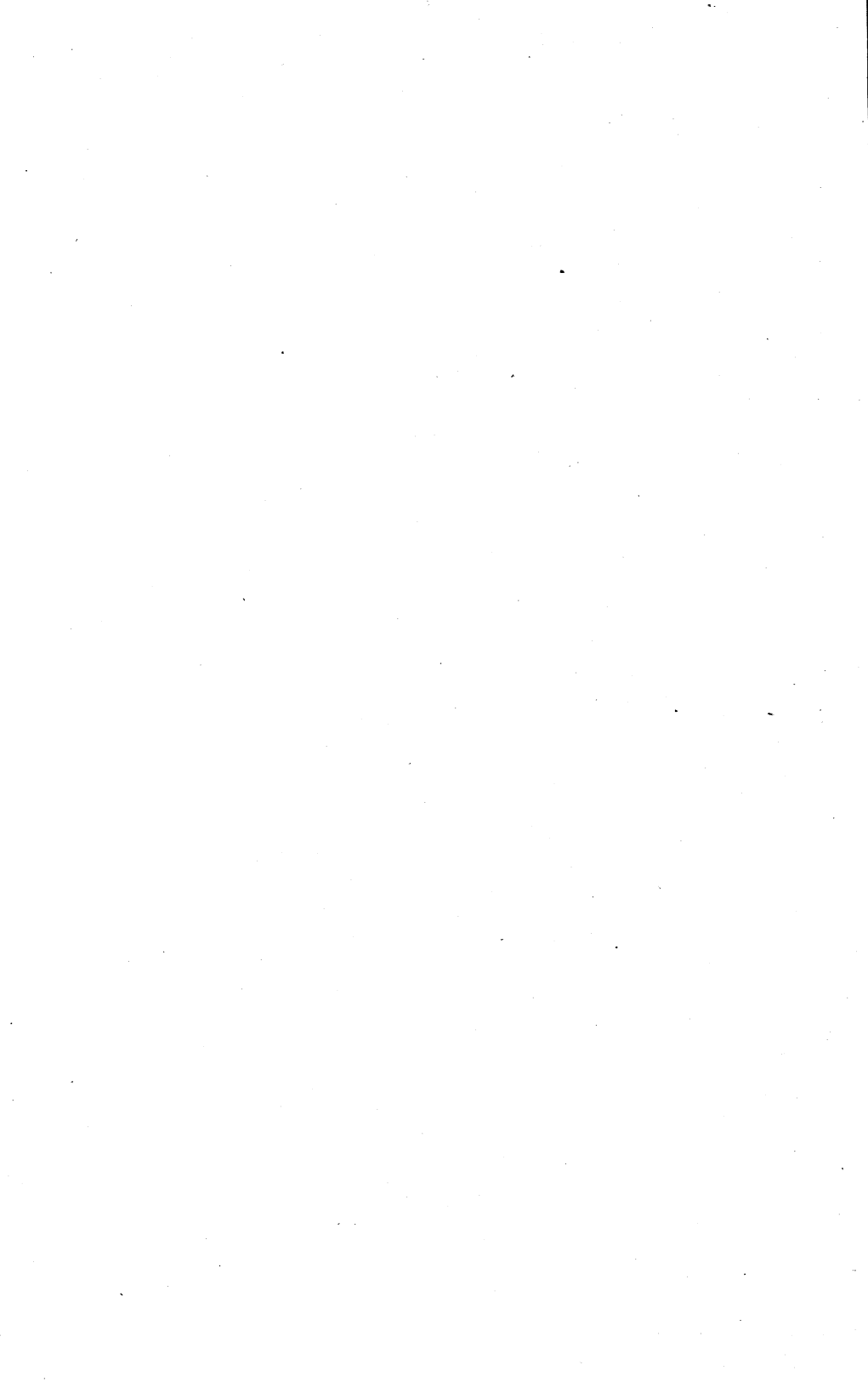


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PREFACE.

The present report upon housing conditions in the city of Milwaukee is the result of the law passed by the State Legislature of 1903 calling for an inspection of, and report upon the building and care of tenement houses. The law is as follows:—

CHAPTER 203, LAWS OF 1903,

Authorizing the Commissioner of Labor, Factory Inspectors and State Board of Health to Inspect Tenement Houses.

Section 1. The commissioner of labor statistics and the inspectors employed in his department are hereby authorized at all reasonable hours to inspect tenement houses for the purpose of ascertaining the sanitary condition of such buildings and also to ascertain whether or not the same are crowded so as to seriously interfere with the health of the occupants; to ascertain whether or not a sufficient quantity of wholesome water is introduced into such buildings and proper provisions made for closets and other conveniences necessary to preserve the health of the occupants. Like authority is also conferred upon the state board of health and the several boards of health in the cities of the state.

Section 2. It shall be the duty of the commissioner of labor statistics to embody a report of his investigation in his next biennial report and make such recommendations as to building tenement houses as will tend to preserve the health of the occupants of such buildings.

Owing to the large amount of regular work devolving upon the department of labor statistics, and some special investigations already begun by the department it was impossible to begin the tenement investigation at once. But in the early part of the year 1905 plans were formulated and an inspector appointed to carry on the work. For several months only a part of

the time could be given to this work, but during that time a general study of the subject was made; the building and sanitary regulations of foreign and American cities, including Milwaukee, were investigated and compared; the local departments of Health, Police, Fire and Building Inspection were called upon for information bearing on the subject of tenement houses in Milwaukee; and Inspection Report blanks were prepared covering the general elements of the tenement problem and the special phase presented in Milwaukee, that being the only city of the first class in the state.

It was not until the middle of the summer that the entire time of the inspector could be given to tenement investigation, at which time a house to house canvass was begun which was carried on until December, 1905. Those districts were chosen in which overcrowding or insanitary conditions were known or supposed to exist, and special attention was given to buildings which would properly be classed as tenement houses. Although under the law the better class of flat and apartment buildings are tenement houses, it was not believed to have been the intent of the Legislature to include that class in the present investigation. A statistical table is included, however, showing the increase in size and number of such buildings in the city of Milwaukee.

The short discussion of tenement conditions in foreign cities is embodied in this report to show that where preventive measures were not used in time, remedial action was absolutely necessary later, among progressive nations. Statements concerning tenement conditions in foreign cities are based upon personal investigation made in 1901 and 1903.

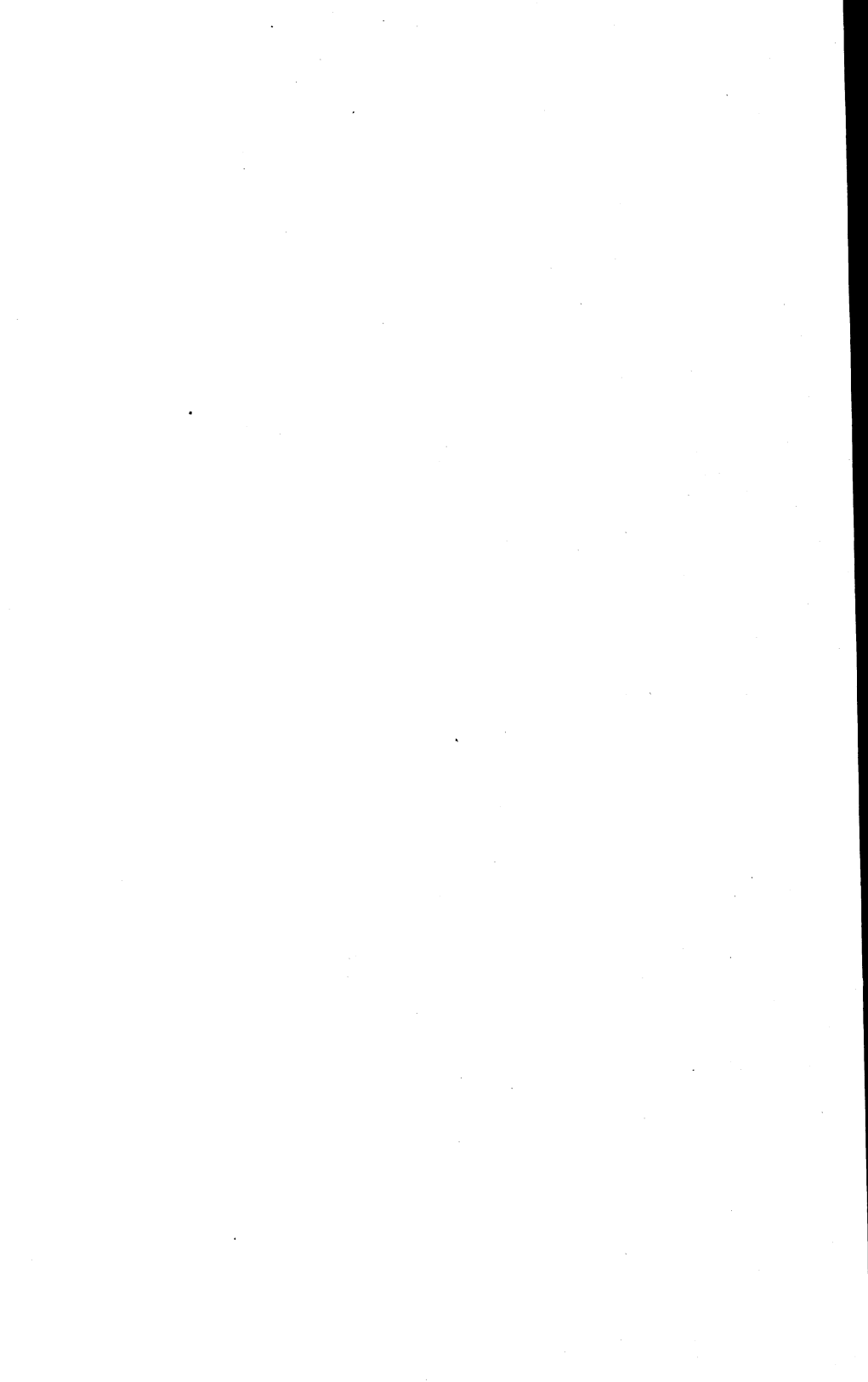
The discussion of tenement conditions in American cities includes only a few of the larger cities presenting housing problems. These cities, as well as several others, are investigating their housing problems with the intention of securing reformed building and housing regulations. Statements concerning housing conditions in American cities are based upon personal investigation made in 1901, 1903 and 1906.

New York City furnishes an impressive object lesson. There tenement evils began earliest and proceeded farthest without any, and later, without proper regulation, until the number of insanitary tenements increased to such proportion that when the present tenement house law was passed, the

evils already crystallized into brick and mortar formed an insurmountable barrier to the adoption of full and adequate requirements regarding changes to be made in old tenement houses.

As this report is intended primarily for use in securing legislative action concerning the building, altering, sanitary regulation and inspection of tenement houses and other buildings so occupied for living purposes that local evils stand as a menace to the whole community, an attempt is made to include in the Appendix certain material which can be used in judging present conditions and other material which can be used as a guide for future regulations.

An expression of thanks is due to the various cities and states which have furnished information concerning local sanitary and building regulations, as is also an acknowledgment of the courtesy of the Departments of Health and Building Inspection of Milwaukee in furnishing ready access to the records of those offices. Thanks are due also to Mr. Joe Derfus and Mr. Felix Michalak of the Milwaukee Health Department for efficient assistance at various times in the local housing investigation.



THE HOUSING PROBLEM IN WISCONSIN.

INTRODUCTION.

THE TENEMENT HOUSE PROBLEM.

One of the greatest social problems arising with the development of industrial life and the concentration of population in cities is that of the housing of the working people and the poor. For years this question has commanded the serious study of men of intellect and humanitarian impulses. Municipalities, when finally awakened to the conditions in their midst and the problem which confronted them, have set at work the machinery of legislation to mitigate the evils already existing and prevent the growth of others. Such action is not necessarily philanthropy. It does not need to await the development of the altruistic spirit in men. Self-interest, if no other exists, ought to be enough to prompt it. This is not alone the problem of the working people; it is the problem of every citizen in every city, especially those cities governed by democratic rule. Healthy home life is necessary to make good men, and also good citizens. And it seems hardly necessary to point out that the standard of living and the code of morals of the citizens determine the government, health and morals of the city.

The home problem is the housing problem. And the housing problem is not solved merely by providing shelter. The vital element is the kind of shelter provided. Herding people together under one roof, in conditions easily conducive to disease and crime is to complicate the problem and increase the burden which society will inevitably have to bear. It is only where home-life is made secure, healthful and moral that the best childhood, manhood and womanhood can develop.

Both in England and America housing conditions have been the subject of investigation since the early part of the 19th century, and with the growth of cities have called more and more for extensive as well as intensive study. In America, New York City produced the earliest and worst form of tenement dwelling; and with the growth of the city, the increase of immigration, the congestion of population, and, from 1879 to 1901, the erection of the six story building on the twenty-five foot lot as the uniform type of tenement dwelling, New York City today presents the worst tenement conditions in the world.

This type of narrow tenement dwelling, 5, 6, 7, even 11 and 12 stories high, with air shafts often less than 2 feet 4 inches wide (the minimum required by the old law of New York) is quite uncommon in the larger foreign cities. In England, for instance, the poorer population occupy, for the most part, two and three story houses, too often old and insanitary, but sheltering fewer people on a limited space of ground. This is true of London as well as of Manchester, Birmingham, Liverpool and other cities. In the larger continental cities such as Paris, Vienna and Berlin the poorer classes live in much higher buildings which approach nearer to the New York type although not often built on so narrow a lot. It is in the two Scotch cities, Edinburgh and Glasgow, that one finds the type of tenement house so common in New York. In these two cities much idleness and drunkenness among the poorer population have increased the difficulty of solving the tenement problem.

In the main, the over-crowding in foreign cities, especially in England and on the continent, is one-room over-crowding, the result of congestion of population in the two and three story buildings.

METHODS OF SOLUTION IN FOREIGN CITIES.

In Great Britain.

The favorite method in England of meeting this situation has been by legislation directed to the end of clearing out large slum areas, the condemnation and destruction of insanitary groups of houses and their replacement by "model tenements" erected and operated by the city. The problem of providing housing

accommodations for the population thus displaced has not been an entire success, as in almost every case fewer people were rehoused than were displaced. However, the problem there ought to be easier of solution than the same is in New York, as much higher (and at the same time sanitary) houses can be built on a space previously occupied by the lower built type. In London, corporations and private individuals have built model tenements which, while giving much improved accommodations have commanded a higher rent. These, therefore, are occupied by the better class of laboring people who are willing to pay for improved conditions.

In 1890 Great Britain secured the Housing of the Working Classes Act which superseded the previous acts bearing upon the subject and gave a uniform law for Scotland and Ireland as well as England.

Part I places upon the local authority the responsibility of preparing and executing (with the approval of Parliament) plans for the improvement of insanitary areas, and the provision of housing facilities on the area concerned for at least half the population displaced.

Part II provides that the vestries and district boards may, in proceedings before a magistrate, secure the demolition of single houses unfit for habitation. These vestries and district boards may also purchase and demolish other buildings, which by reason of their proximity to or contact with other buildings, form an obstruction to ventilation or prevent remedial measures being carried out on other buildings. To provide for the housing of the persons displaced the London County Council adopted a resolution requiring that "housing accommodations shall be provided for a number of persons equal to that of the working classes displaced by any scheme under the Housing of the Working Classes Act of 1890 or under the provisions of any improvement act, but not necessarily in the immediate neighborhood of the displacement, due consideration being given to the needs of those living in any particular area."

Part III authorizes the County Council to purchase by agreement, or, with the sanction of the Secretary of State or Parliament, by compulsion, buildings for the accommodation of the laboring class, or land for the erection of such buildings.

The provision which has been made and is still being made for housing the occupants of buildings destroyed is markedly in-

adequate. Throughout the whole of Great Britain wherever insanitary houses have been destroyed and bad areas have been cleared up it has been found that a larger number of people were displaced than were rehoused. This is so marked that the public press is strongly urging the purchases of large suburban areas for the erection of houses for the poor.

The Continent.

The laws enacted by Continental governments did not direct municipalities to purchase unhealthful areas and destroy insanitary buildings, but gave financial support to schemes for the building of model tenements. In Paris during the last thirty-five years and in Vienna during the last twenty-five years the work of demolition and reconstruction has been carried on on a large scale but it has been for the purpose of beautifying the cities and not for the better housing of the poor. The destruction of old buildings for the construction of the boulevards of Paris displaced many poor people, who, as was inevitable, sought shelter in other poor quarters, thus intensifying the crowded condition in those places. This also occurred in Vienna in the construction of the great Ringstrasse, although not to so great an extent. In this city a scheme was put in operation by which a certain percentage of taxation was permitted in case an owner erected a better or more expensive type of house. The direct result of this was the construction of houses whose rental was beyond the means of the poorer classes, so this must be considered a failure as a solution of the problem of the housing of the poor.

The Belgium law of 1889 provided for the formation of semi-official Committees of Patronage whose work was the study of sanitary conditions. The investigation by these committees shows that in Brussels, out of 19,284 families, 9,364 lived in single rooms, of which 2,186 were attics and 200 cellars. The Belgian law also provided that the National Savings Bank might invest a portion of its funds in the construction of model dwellings for the poor, first securing the approval of the local Committee of Patronage. The loans were to be made to joint societies of Credit or Construction which should purchase the site and carry on the construction of the building.

In 1894 France passed a law permitting the voluntary formation of committees on cheap dwellings in cities, and authorized

certain public savings institutions to loan part of their funds to companies for the erection of model dwellings for the poor. In 1895 another law was passed which extended this privilege to all savings banks. It is believed that very little has been accomplished by these laws as few of the buildings desired have been erected.

These facts demonstrate clearly that under government legislation or municipal ordinance, municipal action in the movement for better housing for the working classes has not been a complete success either in Great Britain or on the Continent. Two faults have been most apparent, the slowness with which the clearing of insanitary districts has been carried on and the inadequate housing provided for the people displaced. In many cases the houses erected by the municipality were of so much better class that rents were necessarily higher and so gave accommodation to a higher class of working people. This forced the poorer class which had occupied the old houses into still worse quarters, and aggravated the evil in another place.

Apparently no effort has been made in foreign cities to license tenement houses to prevent overcrowding of inhabitants, except in the Scotch city of Glasgow. Here the Glasgow Police Amendment Act provides that inspectors may enter dwelling houses or apartments consisting of not more than three rooms used as sleeping rooms, for the purpose of ascertaining the cubic feet of air space contained in the rooms and the number of persons permitted to use the same for sleeping apartments. The act requires at least 400 cubic feet of air space for every person over ten years of age and 200 cubic feet for every person under ten. Where the total cubic contents is less than 2,000 feet the inspector is required to affix to the door a metal tag stating the cubic contents and the number of persons permitted to occupy the apartment. To enforce these requirements, Glasgow has a special detachment of sanitary inspectors doing night work from about 11:30 o'clock P. M. to 4:30 A. M.

SOME BUILDING AND SANITARY REGULATIONS IN FOREIGN CITIES.

In foreign cities the building laws and sanitary regulations apply to all classes of dwellings alike. The subjects dealt with include the height of buildings, the size of open spaces, the height of basement living rooms and the sanitary provisions.

The London Acts require that no new dwelling house be erected to exceed 80 feet in height; and that no dwelling house erected on a street less than 50 feet wide should exceed in height the distance from the front wall of the building to the opposite side of the street.

There is required at the rear of each dwelling house an open space not less than 10 feet deep nor less than 150 square feet in total area, belonging to the particular house.

All basement or cellar rooms used as dwellings must be at least 7 feet high, with the ceiling at least 3 feet above the level of the ground.

The Liverpool Acts limit the height of dwelling houses facing on a street to the width of the street and houses built on courts may not exceed in height 30 feet nor contain more than two stories above the ground floor.

The Manchester By-Laws of the City Council require that on streets less than 30 feet wide houses must not be more than two stories high. On streets over 30 and less than 36 feet wide, houses may be three stories high.

Every house must have at the rear an open space 150 square feet in total area with a least dimension of 10 feet. Where the house is 35 feet high this least dimension must be 25 feet and in all cases the open space must extend across the entire width of the house.

One wall of each water-closet must be the external wall of the house and must have a window 1x2 feet opening directly to the external air.

Glasgow is regulated in its building operations by the By-laws of the Commissioners of Police and the Building Regulation Act. These require that no house facing upon a street shall exceed in height the width of the street.

Ventilation of sleeping apartments is secured by requiring that there shall be in front of at least one-third of every window of any sleeping apartment a free space equal to at least three-fourths of the height of the wall from the floor of the sleeping apartment to the roof of the building, measuring such space in a straight line perpendicular to the plane of the window.

On account of the courts and closes so common in Edinburgh and Glasgow it has been necessary to provide for thorough ven-

tilation of blocks. It is therefore required that where streets are designed in any form which contemplates the erection of buildings facing outward and enclosing a space of back ground, the owner must provide an opening 15 feet wide through such enclosure from street to street for the purpose of through ventilation. This does not apply where the enclosed space in the center of the block contains more than 16,200 square feet with a least dimension of 90 feet; and if the surrounding buildings are only three stories high and the inclosed space contains 12,600 feet with a least dimension of 65 feet, the opening for ventilation is not required.

To guard against overcrowding, an apartment of one room must contain at least 1,000 cubic feet of air; an apartment of two rooms, 1,600 cubic feet; an apartment of three rooms, 2,400 cubic feet. Each sleeping apartment must be at least 9 feet 6 inches in height from floor to ceiling if it is a ground floor room; on any other story it must be at least 9 feet.

Not more than sixteen separate apartments shall be contained in any one tenement house where there is an inside staircase, nor more than twenty-four where there is an outside staircase. There shall be not more than four apartments on any one floor.

Every water-closet shall have a window not less than 4 square feet in area communicating directly with the external air.

In Edinburgh the sanitary and building regulations are contained in the Municipal and Police Acts, the Improvement and Trust Acts, and the Scotland Public Health Act. Under these acts no house on any street or court shall exceed $1\frac{1}{4}$ times the width of the street or court, and no house shall exceed 60 feet in height without special permit.

Every house must have at the rear a yard space equal to $\frac{3}{4}$ the area of the house where such house is not more than 4 stories high. Where any house is more than 4 stories high such yard area must equal that occupied by the house. Special permission to modify this may be granted by the Dean of Guild Court.

Where houses are built around a block and inclose in the center of the block a space less than 18,000 square feet whose least dimension is 120 feet, there must be an opening 15 feet wide and 15 feet high through the buildings at opposite points in the block, in order to furnish through ventilation.

In every dwelling house of more than two apartments there must be provided a water-closet, one side of which is the external wall of the house and contains a window opening of not less than 4 square feet, direct to the external air.

The Paris building regulations, up to 1903, provided that houses should be built in proportion to the width of the street according to the following requirements:

<i>Width of Street.</i>	<i>Height of Houses.</i>
7.80 metres (25 ft. 7 in.)	12 metres (39 ft. 4 in.)
7.80—9.74 metres (31 ft. 11 in.)	15 metres (49 ft. 2 in.)
9.74—20 metres (65 ft. 7 in.)	18 metres (59 ft.)
Over 20 metres	20 metres (65 ft. 7 in.)

In no building shall the height of the ground floor be less than 2.80 metres (9 ft. 2 in.) nor shall rooms on any other floor be less than 2.60 metres (8 ft. 6 in.) in height.

In buildings under 18 metres in height the courts upon which sleeping apartments open must have a total area of not less than 30 square metres (323 sq. ft.) with a least dimension of not less than 5 metres (16 ft. 5 in.). In buildings over 18 metres (59 ft.) in height, where wings of the building are of the same height the court must have at least 40 square metres, (430 sq. ft.) total area, with a least dimension of 5 metres (16 ft. 5 in.). Where the wings of the building are over 18 metres the court must contain at least 60 square metres (646 sq. ft.) with a least dimension of 6 metres (19 ft. 8 in.).

A revision of the building code of Paris has been in progress. The principal change proposed is to increase the height of buildings and at the same time increase proportionately the area of adjacent open spaces.

Berlin has a revised Act of Building Regulations which requires that houses fronting on the street shall not exceed in height the width of the street, and that rear houses must not be more than 16 metres (19 ft. 8 in.) higher than the width of the open space directly in front of them.

All buildings separated from one another by a space and not merely a party wall must be separated throughout by a space whose least width is $2\frac{1}{2}$ metres (8 ft. $1\frac{1}{2}$ in.) provided there

are no openings in the wall which face each other, and at least 6 metres (19 ft. 8 in.) where such openings do exist.

The proportion of lot which may be built upon is also definitely limited.

METHODS OF SOLUTION IN AMERICA.

In America the enlargement of municipal functions to the end of destroying slum areas and erecting thereon municipal model tenements has not seemed desirable to those seeking tenement reform and social betterment. The only movement in this direction has been in New York City, where several notorious slum areas have been destroyed and replaced by public parks and play-grounds, thereby producing a sudden and marked improvement in the character of the district.

The experience of New York, the early neglect, later mistakes and inadequate reforms, and present tremendous tenement problem which the new law and the Tenement House Department must cope with should prove a lesson to other cities whose tenement problem has just begun.

History of New York's Tenement Legislation.

The movement toward housing reform in New York began as far back as 1834 when the population was 270,000. The city inspector in his annual report on vital statistics called attention to the increase of deaths over the increase of population and ascribed it to intemperance and the crowded and filthy state in which a large part of the population lived.

In 1842 Dr. John Griscom, City Inspector of the Board of Health, submitted, in addition to his annual report, a pamphlet entitled, "A Brief View of the Sanitary Condition of the City." He called attention to the crowded condition and poor ventilation in a great number of dwellings, the physical influence of the impurity of the atmosphere, and the depraved effect which such modes of life exert upon the moral feelings and habits.

In 1843 the Association for Improving the Condition of the Poor was organized and between 1846 and 1853 the work of investigation was carried on by the Association, and it was decided to form a company for the building of model tene-

ments. This plan was not carried out although architectural plans of model tenements were prepared.

In October, 1853, a special committee of the Association published a pamphlet of thirty-two pages, which constitutes the first tenement house report published in America.

In 1856 a committee was appointed from the Legislature to examine tenement conditions in New York and report the same to the Legislature. This committee made a report on the work done in the short time allowed, and then of their own will and at their own expense they continued the work and rendered their report to the next Legislature, in 1857. This constituted the first legislative inquiry on the subject, and urged the formation of a separate Tenement House Department.

Ten years later the first tenement house law was passed and the enforcement was vested in the Board of Health. This law provided for many important things but failed to limit the amount of lot space which could be built upon.

In 1879 changes were made in the tenement law, limiting the amount of space that any new tenement house might occupy to 65 per cent of the lot. Unfortunately, however, a clause was inserted allowing the Board of Health in special cases to modify this provision. As is often the case where discretionary power is given, the exception became the rule and the Board of Health was found to be allowing 85 and 90 per cent. of the lot to be built upon.

In 1879 a newspaper in New York known as the "Sanitary Engineer" offered prizes for the best architectural design for a tenement house on the ordinary city lot 25 feet wide by 100 feet deep. Architects numbering 190, from all parts of America, and from Canada and Great Britain sent in plans. The first prize was awarded to Mr. James E. Ware, and from that date the notorious "double-decker dumb-bell" tenement became the rule in New York's tenement house system. It is strange that what was at that time considered by the judges a model tenement should at the present time be considered one of the very worst types in existence. However, the approval at that time was not universal and many of the leading papers severely censured the choice.

In 1884 a second Legislative Commission was appointed to investigate the tenement house question and after seven

months' work this Commission reported on conditions and made twenty distinct recommendations. These recommendations did not result in legislation until three years later. Then the Legislature of 1887 amended the tenement house law, increased the number of sanitary police, and provided for a permanent Tenement House Commission to meet once a year. The law also provided that all owners of tenement houses should file their names and addresses annually with the Board of Health and that the Board of Health should make a semi-annual inspection of every tenement house. Among other provisions was one which extended to all old buildings, altered to be used as tenements, the requirement for new tenements regarding the percentage of lot to be occupied; and another which required one water-closet for every fifteen occupants.

A third Legislative Commission published in 1895 a voluminous report including twenty-one recommendations. These touched upon the questions of rear tenements, over-crowding, fire-proof construction, plumbing, sanitation, basement dwellings, paving of streets in tenement districts, public parks, recreation piers, public baths, etc. The Legislature of 1895 passed a new law including many of these recommendations.

In 1900, after considerable agitation by the Charity Organization Society, another Tenement House Commission was appointed by the Legislature and in 1901 the Tenement House Act became a law and is now enforced by the newly created Tenement House Department of New York.

HOUSING CONDITIONS IN VARIOUS LARGE AMERICAN CITIES.

Chicago.

The City of Chicago has a serious housing problem, although not as yet the tenement house problem confronting New York, where entire blocks are built in solidly with large high tenements presenting the evil results of the air shaft. In Chicago large multiple dwellings, flats and apartment houses, intended for the better class of occupants, have sprung up in large numbers over the entire city, but the majority of the working people live in one or two story houses, which are often occupied, it is true, by from two to a half

dozen families. While some large buildings, housing great numbers of people, exist in the slum districts, the chief problem consists of these smaller houses, constructed of wood, in all stages of dilapidation, without proper drainage or repair. These houses are crowded thickly in a block, often three on a lot, so that the rear tenement prevails to a great extent, as does also the basement dwelling. Many old private dwellings are converted into poorly appointed multiple dwellings.

Until 1899 no attempt was made in Chicago to remedy the bad housing conditions or prevent the development of new evils. Now, however, the Building Ordinances of the City of Chicago contain 100 sections relating exclusively to tenement houses which include all buildings used as a home or residence for two or more families living in separate apartments.

The ordinances of the Health Department also contain a number of provisions relating to this class of buildings.

Philadelphia.

Philadelphia, notwithstanding its large population, is not yet confronted with a tenement house problem, since the majority of its working people live in small houses. In many cases these are occupied by three or four families, but it is not the rule. The slum problem, however, is a serious one, and consists of dilapidation, poor drainage, and overcrowding in the old quarters of the city. Old frame and brick buildings, once the residences of more prosperous families, have in their period of decay become the dwellings of the poor.

Philadelphia, however, has some excellent laws and ordinances relating to the subject. These refer to height and size of rooms, ventilation of rooms and halls, percentage of lot occupied, stairways, water supply and other requirements. One important requirement is that no light shaft or open space shall be less than 8 feet wide, and when between houses, shall be not less than 12 feet wide; and that every shaft or court furnishing light and air to tenement house living or sleeping rooms shall open upon one side into the street, or into the yard or open space.

Boston.

Boston, next to New York, has the worst tenement conditions in the United States. The chief evil in this city, is a considerable number of tall tenements fronting on narrow alleys, in which a large number of poor foreigners reside. These buildings are usually four or five stories high and shelter a large number of people although seldom as many as a New York tenement. Besides this tenement problem, Boston has a housing problem similar to that in many other cities where age, dirt, dilapidation and defective drainage are the chief evils. For many years, however, Boston has made an effort to solve its tenement problem and has passed several good laws relating to the subject. These regulate the height and kind of building to be used as tenement houses, stairways, fire-escapes, percentage of lot to be occupied, ventilation of rooms, basement living-rooms and condemnation of old buildings unfit for habitation.

Baltimore and Washington.

The two cities of Baltimore and Washington have peculiar housing problems which result in large measure from the complicated alley system found in both cities. Instead of alleys going straight through blocks, and being open to inspection from the street, as found in the city of Milwaukee, the alleys of Baltimore and Washington branch and turn many times after entering the block. On these alleys, shut off from public notice, the most insanitary conditions prevail, and vice and crime flourish. The houses are for the most part small shacks, mere hovels so old and dilapidated as to be unfit for human habitation. These houses, being small, have involuntary light and ventilation, but many are without water supply or sewer connection and the surroundings are destructive to health and morality.

There are in both cities building laws and health ordinances relating to tenement houses but these are manifestly inadequate to deal with conditions already existing. One notable piece of legislation, however, was the law passed in 1892 which provided that there should be no further building of habitations on alleys of Washington less than 30 feet wide or which were not supplied with sewerage, water mains and light.

HOUSING CONDITIONS IN MILWAUKEE.

In any housing investigation the tenement house is usually the moving cause and becomes the element around which remedial measures center. The Century Dictionary defines a tenement house as follows: "A house or block of buildings divided into dwellings occupied by separate families. In ordinary use the word is restricted to such dwellings for the poorer class in crowded parts of cities." The National Cyclopedia gives the following detailed but limiting definition: "The poorest class of apartment houses. They are generally poorly built, without sufficient accommodation for light and ventilation, and are over-crowded. The middle rooms often receive no daylight, and it is not uncommon in them for several families to be crowded into one of their dark and unwholesome rooms. Bad air, want of sunlight, and filthy surroundings work the physical ruin of the wretched tenants, while their mental and moral condition is equally lowered." No more accurate definition of the worst type of tenement house could be written, but it is only one of the various types of tenement houses all of which should be controlled by law.

Robert W. De Forest in his work on the Tenement House Problem of New York says, "No possible distinction in law can be made between the so-called tenement, flat, and apartment houses. As respects tenement regulations they are absolutely and irrevocably one and the same thing. They are all multiple houses. That is, they all have many parts used in common by the different families that use the houses and require some quasi-public care and supervision. There may easily be difference in the degree of such supervision required. That is, the extent of public inspection needed in the highest grade of apartment houses is unquestionably, by reason of the habits of its occupants, less than the inspection required for the lowest grade of so-called tenement houses, but the kind of regulation, the minimum size of courts, the minimum lighting of rooms and halls is the same. Nor is there any certainty that the lesser degree of inspection, sufficient today by reason of the superior character of occupancy will suffice for the changed occupancy tomorrow."

Sanitary and fashionable apartment houses are now building in large numbers on the desirable residence streets of Milwaukee. The statistical table on flats and apartment houses shows that the number and size of buildings of this class have increased from year to year. Although intended for the occupancy of the better class of tenants and built to meet the requirements of that class, these buildings present some features which should have been forbidden, the chief one being insufficient light in sleeping rooms and hall-ways. In their economy of land space it is reasonable to suppose that they will in time find a counterpart in the poorer quarters, or may themselves become the habitations of the poorer class as the fashionable quarter shifts. The latter assertion is warranted by the fact that in certain portions of the city what were once fashionable individual residences have since been converted by inadequate alteration into tenement houses. Certainly some preventive measures should be established before such buildings become too numerous and their evils unquarable.

The detailed housing investigation in Milwaukee covered certain districts which were supposed, or known to contain insanitary or crowded conditions. The districts so chosen were as follows: (1) A portion of the 6th, 9th and 2nd wards, bounded by Third and Ninth and Chestnut and Cherry Streets, and inhabited chiefly by Russian, German and Hungarian Jews; (2) a portion of the 2nd and 4th wards extending from Chestnut Street to the first alley north of Grand Avenue, and from Second and Third Streets to about Ninth Street, including within its boundaries the Negro quarter between Wells and State Streets, and Second and Sixth Streets. (3) the 3rd ward below Michigan Street, inhabited chiefly by Italians and Irish; (4) Jones Island, inhabited chiefly by Germans and Poles; (5) the district along South Water Street, Clinton and Reed Streets in the 5th Ward and along Kinnickinnic Avenue in the 12th ward where are located the 'Longshoremen's Homes, Mechanic's Homes and cheap lodging houses; (6) the section of the 17th ward in the vicinity of the rolling mills where are situated a number of Hungarian and Italian lodging and boarding houses; (7) a typical section of the 14th ward which is settled by Poles, has the largest popu-

lation and the highest death rate per thousand of all wards in the city; (8) the scattered colonies of Austrians, Hungarians, Greeks, Slovaks and Macedonians located on Florida Street, Grove Street, St. Paul Ave., Cedar Street, Chestnut Street, State Street, Twelfth Street and other places.

Since no definite tenement district exists in the city it was found that only certain houses or groups of houses in the various sections could reasonably be included in the report.

The New York Tenement House Act defines a tenement house as any house or building or part thereof which is rented, leased, let or hired out to be occupied as the home or residence of three or more families living independently and doing their cooking upon the premises, or by more than two families on any one floor so living and cooking but having a common right in the halls, stairways, yards and closets. This definition furnished a working basis for the detailed inspection of tenement houses in Milwaukee.

It was soon apparent, however, that quite as serious as the tenement problem was the problem of the cheap lodging or boarding house. These establishments were found to be so numerous, so over-crowded, so poorly housed, and so insanitary as to warrant description in this report, with the prospect of their more stringent regulation and inspection. The total number of such lodging houses in the city is not shown in this report. To do so would have required more time than was allowed during this investigation. The reason is plain. To locate and inspect the lodging houses on or near South Water, Clinton and Reed Streets, Kinnikinnie Avenue, or Wells and Second Streets is a simple matter as those lodging houses have been there for years and are permanent. The majority of them bear signs denoting that they are lodging houses. But to locate all the foreign lodging and boarding houses scattered through the various sections of the city is quite a different matter. Inspection of a limited number proved that until more stringent lodging house regulations exist the work of locating and inspecting the total number would be unwarranted. No new phases were presented by enlarging the inspection. The story of over-crowding and insanitary conditions was always the same. The only additional information gained was proof that the number was

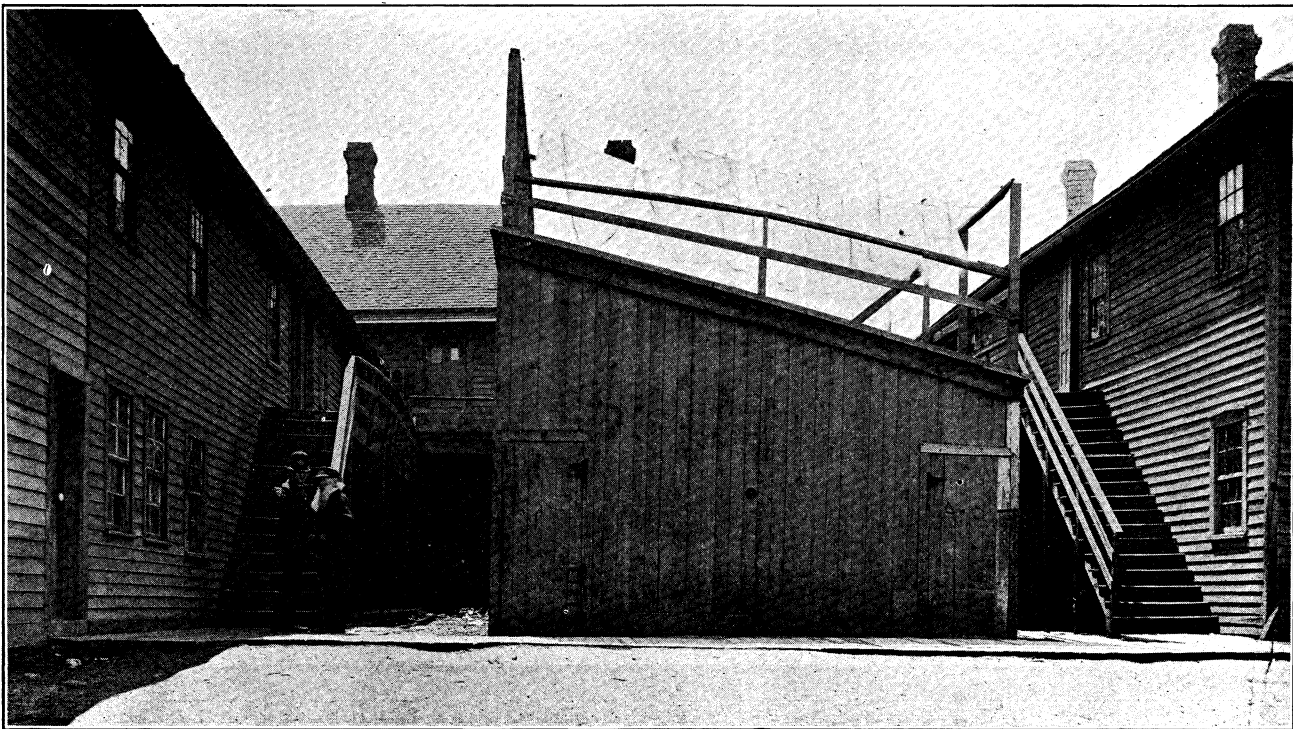


Illustration V.—Group of two story tenements containing 84 persons, chiefly foreign immigrants. This group presents the example of defective drainage shown in Illustration VI.



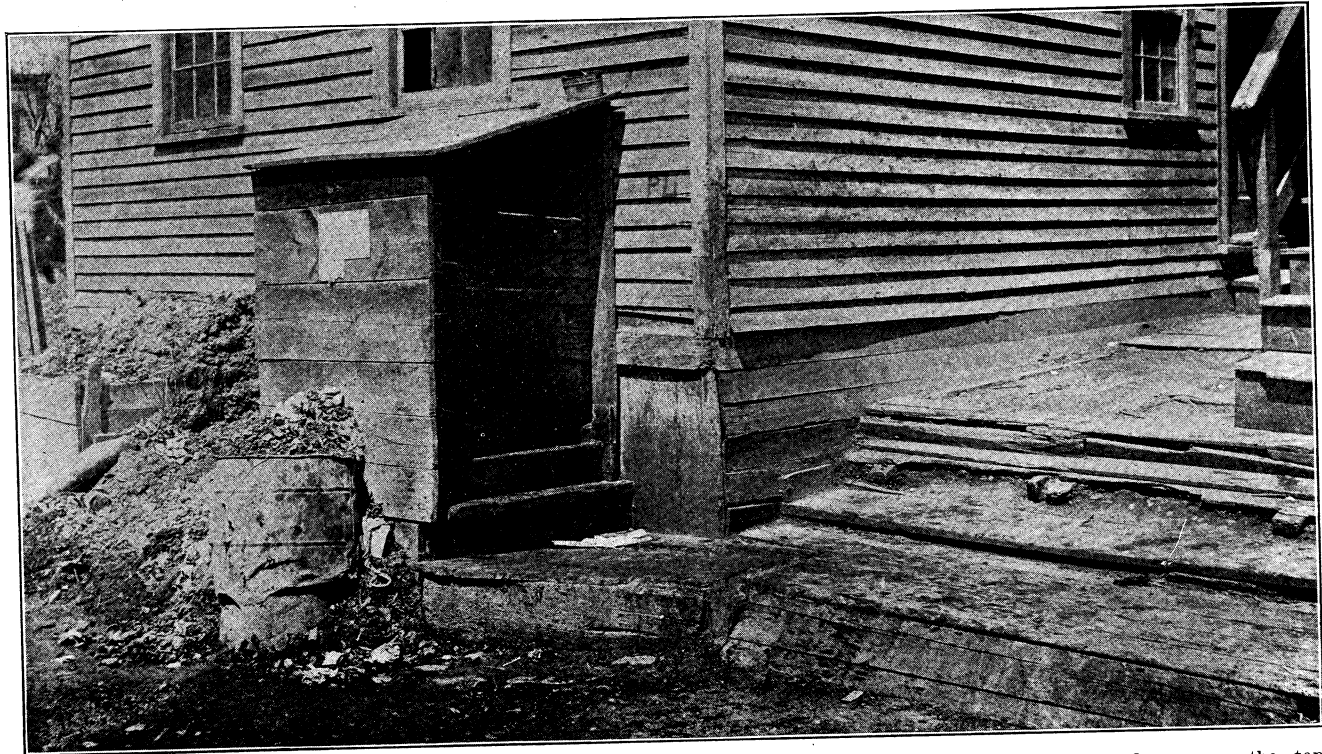


Illustration VI.— Catch basin for the three buildings shown in Illustration V. The drain is clogged, the sewage flows over the top, down the alley, across the cement sidewalk and onto the street.

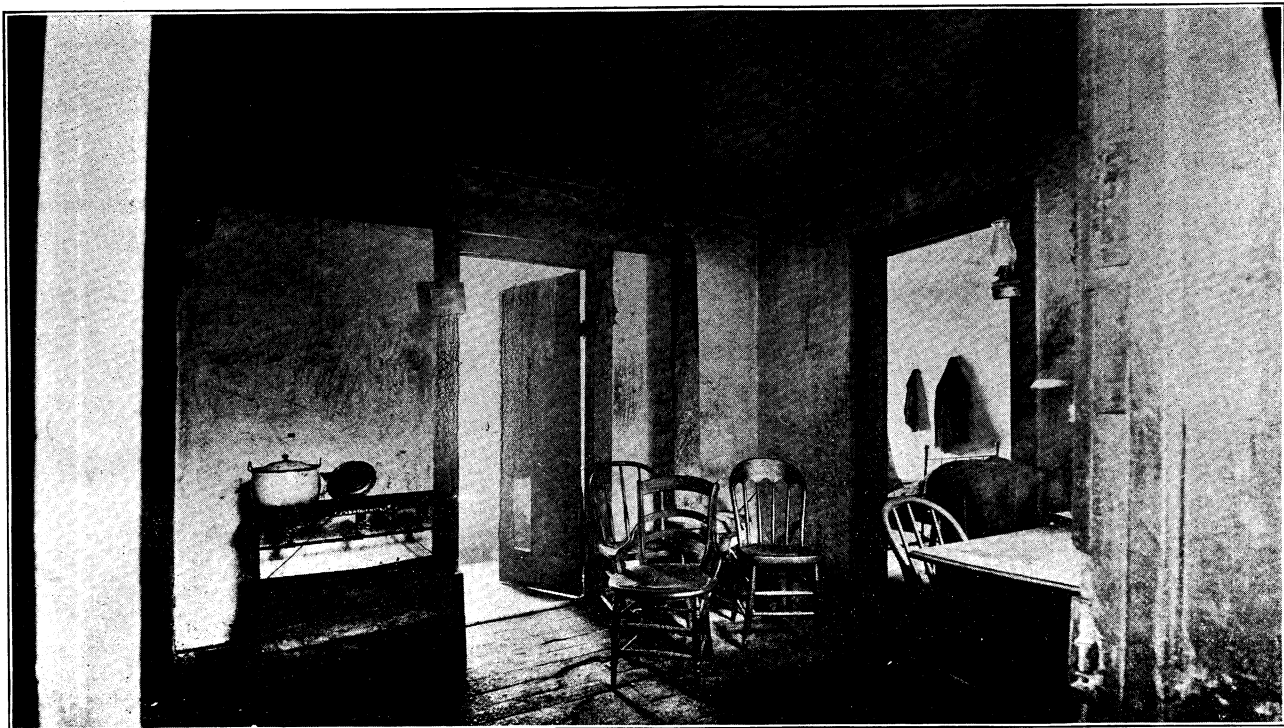


Illustration VII.—Typical group of three rooms occupied by Slovaks. The open doors lead to sleeping rooms, one occupied by four, the other by five men.

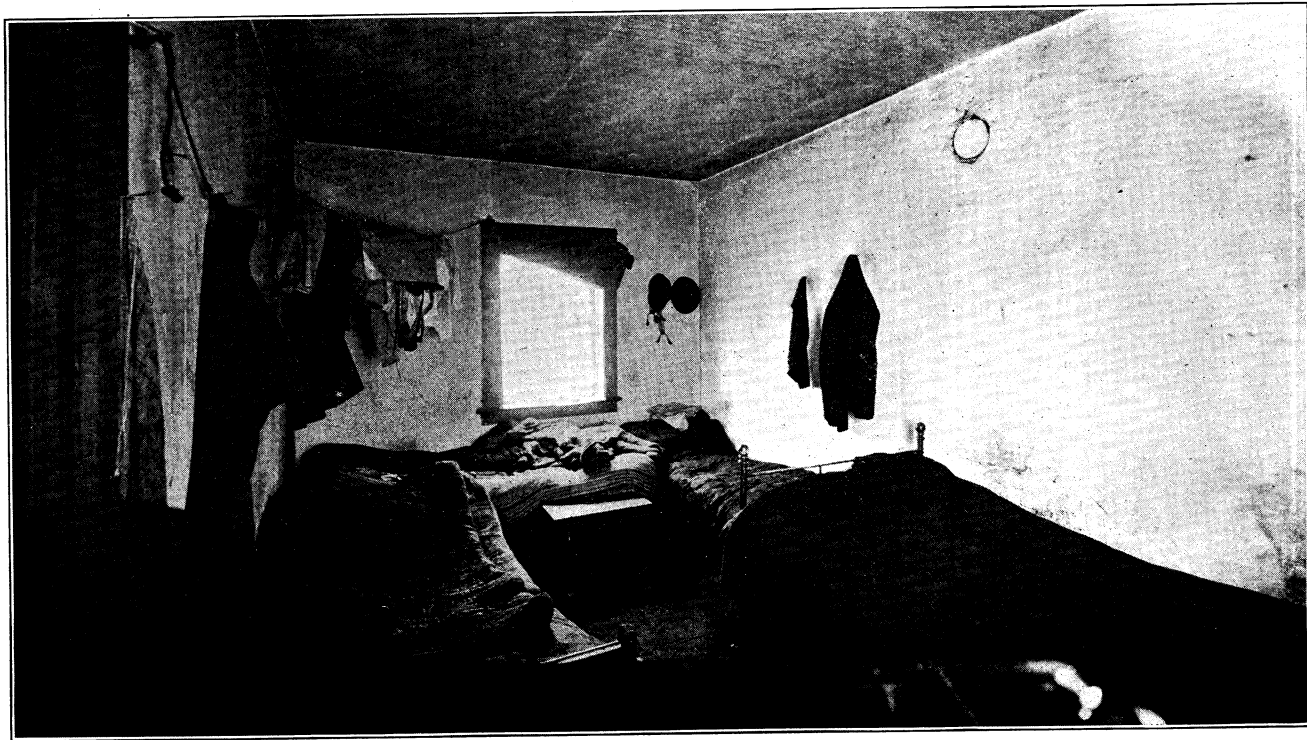


Illustration VIII.—One of the sleeping-rooms shown in Illustration VII. This room is 15 feet 2 inches long by 8 feet 6 inches wide and 8 feet high, and contains four beds, allowing $257\frac{1}{4}$ cubic feet of air space for each occupant.

large and apparently increasing as many of them had been only recently established. Few bore a lodging house sign for all seemed to depend on their patrons for advertisement. This plan evidently worked well and seemed to extend even to Europe as many of the lodging houses contained newly arrived immigrants.

Unless these lodging houses were conducted by a man and his family, and a saloon and lunch counter were established in the front room on the first floor, the whole establishment was less liable to be permanent. In several instances mere lodgings, known to have existed in certain places, were found, upon inspection, to have moved, leaving the building vacant. Tracing them was quite impossible as inhabitants of the neighborhood seldom held communication with the strangers and were rather relieved when they were gone.

DETAILED DESCRIPTION OF VARIOUS ELEMENTS OF THE HOUSING PROBLEM IN MILWAUKEE.

Back-to-back tenements.

This element in the housing problem is illustrated by four tenement houses, two front and two rear, placed back-to-back on a lot 40 feet front by 120 feet in depth, at Nos.— to — Milwaukee Street. The front wall of the two front houses is on the front lot line. An open space 3 ft. 4 in. wide runs from front to rear between the houses. The two front houses are separated from those in the rear by a space 4 ft. 11 in. in width. The front wall of each rear house is at all points 33 ft. from the rear lot line. On this space at the rear of the lot stands a chicken coop, a lean-to shed and a barn stabling two horses. Thus it is evident that little unoccupied space remains on the lot. The houses are separated from the two story building on the adjoining lot on one side by a space about six inches wide. So narrow a space renders the windows on that side useless for lighting and dangerous for ventilation as the space is so narrow that it can not be cleaned and becomes the receptacle for all manner of garbage and refuse. On the opposite side of the lot the side wall of the house is upon the side lot line. At present the adjoining lot is vacant which leaves the windows on that side of two houses available for light and

air, but as soon as the adjoining lot is built upon such windows will be practically useless.

All four houses are of brick, two stories in height with basements 8 ft. high. The ceilings of the basements are three feet above curb level and the entire basements are above lot level. Although every room in the four houses has a window to the exterior air, the rear rooms of the basement and the first floor are so dark on account of the narrow space between buildings that it is necessary to keep a lamp burning there at all times of the day.

A description of one apartment will serve to show the plan of each, although rooms in other apartments are put to various uses, such as the ripening of fruit, the sale of steamship tickets and as lodgings for men. The apartment chosen for description is used entirely as a dwelling, and is occupied by a man, his wife, two small children and two boarders. The front room is light, having two windows opening to the street. The furnishing consists of a stove, a bureau, a table, three chairs and a double bed. The room directly back of this is in semi-darkness, having one window opening upon the six inch space between this building and the one on the adjoining lot, and another window on the opposite side of the room opening upon the narrow passage between the two front houses. This room contains a bed, a cot, a table, and several clothes lines stretched near the ceiling upon which hangs clothing of all sorts. It is necessary to stoop under this suspended clothing to reach the rear room which is almost totally dark. Two windows open from this room to the narrow space between the front and rear houses. In this room the cooking and eating is done, and also the washing and drying of clothes. In one corner of the room the water-closet is built in, entirely without light or ventilation. The plumbing is defective, allowing water to run onto the floor of the compartment, and the wood-work is wet and decayed.

Dark rooms in the Italian quarter.

The worst example of dark rooms is found in a tenement house at No. — Milwaukee street. The building is of brick, two stories high, with a basement 8 ft. in height, the ceiling of which is 4 ft. above the level of the grade. Each floor contains three

apartments of from three to seven rooms each. Every apartment has one dark sleeping room, and owing to a peculiar arrangement of wood and coal bins, the basement apartments have two such rooms. An attempt is made to light some of these rooms by a window opening into an insufficiently lighted living room, but the result is unsatisfactory. In other cases the rooms are left in total darkness.

These sleeping rooms are small and are almost entirely filled by one or two beds, a trunk or chest, and rows of clothing hanging on the walls. In such crowded quarters cleaning is difficult. The dirt goes unnoticed in the darkness and the bedding is seldom if ever taken out of doors to be subjected to the purifying effect of light and air. Each apartment has a water-closet built against a partition wall, with no provision for light or ventilation. At the time of inspection the entire building was in an insanitary condition owing to improper construction and lack of repair. A few of the tenants were neat and made some pretense of keeping their apartments clean. Others were careless and filthy in the extreme. But all united in the complaint that the landlord did nothing but collect the rent, and the appearance of the building indicated that the statement was true. The walls and ceilings showed that they had not been painted or whitewashed for years. Old layers of whitewash or kalsomine had fallen off in patches and in many places the plaster was broken. The window frames had warped and the putty had fallen off, leaving openings around the panes. The roof of the building leaked so that moisture came through the plaster on the second story.

The landlord, with his family, occupies an apartment in the building so that it would be quite possible for him to exercise supervision and know what repairs are necessary if he were so inclined.

At the time of the inspection some of the basement tenants kept lodgers and when questioned reported from five to eight lodgers, as the case might be. It is probable that there were more, as these people are loth to give the exact number for fear their rent will be raised. The tenants on other floors said there were sometimes twenty or thirty men lodging in the basement at night, but whether they stayed any length of time or left shortly, new ones taking their places, it was quite im-

possible to tell since they looked so much alike. If a larger number slept in the basement than was definitely reported they must have slept on the floor as no extra beds or cots were found stored away to indicate that they might be set up at night.

A group of tenements in the Jewish quarter.

The chief tenement evils in the section known distinctively as the Jewish Quarter are a number of old and dilapidated buildings, a considerable amount of basement dwelling, insufficient and insanitary closet provisions, unclean houses and yards due to careless habits of tenants, and the confining of chickens in basements by "Kosher" butchers. A degree of over-crowding is also found in this quarter although the evil of one-room over-crowding is not so serious as in other sections of the city.

At Nos. — to — Fifth Street stands a group of dilapidated tenement houses which are an example of the neglected old buildings in the city still inhabited by the poorer class of people, in this case by newly arrived Russian and Hungarian Jews. These buildings are of wood, two stories high and contain basement living rooms. The exterior is weather stained and decayed. The walls are out of plumb, the roofs are sagged. Inside, the plaster is cracked and grimy, the floors are black and worn, the doors hang unevenly. And these houses rarely lack tenants although the stay of most is short. One house contains three apartments including in all ten rooms. At the time of inspection this house was inhabited by twenty people, five of whom were children under fourteen years of age. The second house contains four apartments and twelve rooms. One apartment of three rooms was vacant and in the remaining nine rooms lived seventeen people, seven of whom were under fourteen years of age. The third house has six apartments and twenty-one rooms. Two apartments were vacant and in the remaining fifteen rooms lived nineteen people, seven of whom were under fourteen years of age. For these three houses, sheltering, at the time of the inspection, fifty-six people, only two closets are provided. These are exterior water-closets, and although new are already unfit for use.

In an apartment in one of the tenement houses lives a cob-

bler with his family. The rear rooms are used as living rooms. The front room is used as the cobbler's work-shop where he sits at his bench near the window. Back of him against one corner of the room, and reaching half way to the ceiling, lies a pile of old shoes, twisted and brown, or green and mildewed, gathered from alleys, refuse heaps and rag peddlers' stores.

These shoes are eventually soaked, scraped, repaired, blackened and sold all in the room opening into the living rooms of this family. The offensive odor permeating the whole apartment testifies to the insanitary condition prevailing there.

Winding stairs.

The worst example of winding stairs in tenement houses is found at No. — Cherry Street. This flight of stairs is 3 feet wide, with risers 7 inches high and treads 17 inches wide at the outer edge and three inches wide at the post. The whole stairway is dark, steep, narrow and dangerous. Even in the day time when the condition is naturally best, ascent or descent is difficult in the half light which pervades the place. A lamp is supposed to be kept burning on the landing at night but often this light is not provided. In case of fire if the tenants undertook to use this stairway in the night serious accident would certainly result. Winding stairs should never be allowed in any tenement or lodging house, even though other means of egress exist, for while such stairs remain they will certainly be used, and furnish a very possible danger.

Curious sleeping quarters.

In an old tenement house located at No. — Grove Street some curious sleeping quarters were found which were the result of the lodger evil. The building is a two story wooden tenement containing four separate apartments which include fourteen rooms. At the time of inspection two apartments were vacant and the other two contained twenty people in all. One of these apartments consisting of three rooms, was decidedly the worse, for here were housed fourteen people, a man with his wife and child, and eleven boarders. One small room was used as a kitchen and was only large enough to hold a cook-stove, a table and two chairs. So large a num

ber of people had to have a separate place to eat so a second room was used as a dining room and contained a table and several chairs. Consequently the third room was all that was left for a sleeping room and into it were crowded four double beds.

Further investigation of the apartment disclosed a narrow pantry from which the shelves had been removed and into which an old mattress was crowded, completely filling the space from side to side and end to end. Even with this strange addition to the provisions for lodging, there were sleeping accommodations for only nine persons. But an interview with the "boss" brought forth the not unusual information that some of the men were factory hands who worked on night shifts and occupied during the day beds which the others occupied at night.

The entire number were Hungarians who had been in this country but a short time. None spoke English and only the man in charge spoke or understood German.

Hungarian lodging houses.

Some strange conditions were found in the Hungarian settlements of the city. The only aim seemed to be to find shelter regardless of the kind. All sorts of old buildings were utilized as dwellings and then were crowded to their utmost capacity.

In one old house, formerly a meat-market, located at No. —, Bishop street, twelve Hungarians live in four small rooms. Two rooms only are used as sleeping rooms. The third is used as a kitchen and the fourth, formerly the refrigerator, is now used as a kind of stock-room where the surplus clothing of the family and boarders is deposited.

In another old house, formerly the village bakery, located at No. —, Bishop street, seventeen people live in eight rooms. The brick oven still stands in the rear of the house, but the remainder of the building has been turned into lodgings. Conditions, although crowded, are not so insanitary as in the former establishment because two women do the work and manage to keep the rooms fairly clean.

A third building, formerly the village engine-house, located at No. —, South Bay street, shelters seventeen people in four

rooms. Here, as is usually the case, one room is set aside as kitchen where the cooking, eating and washing is done. This leaves three rooms to be used as sleeping rooms by seventeen people. One of the inhabitants is the wife of the proprietor and another is his daughter, a girl of fifteen years.

An inspection of the building was made at about two o'clock in the afternoon and at that time several of the lodgers who worked on night shifts in the mills were sleeping in the beds. It is quite probable that the same beds are occupied at night by another set of men who work during the day; although the proprietor would not admit this to be the case. However, even under the circumstances disclosed by a day visit it is difficult to see how health and decency can be preserved under such crowded conditions.

It is not necessary in Milwaukee for people to live in this manner and it should be prohibited by law. The reason for their living so is to save money. The majority of the men are in this country only temporarily. Some are unmarried and others are married men who have left their wives and families in the old country and have come here alone to remain only three or four years and then return home with their savings. They are industrious and honest and are considered good customers by tradespeople. Their diet consists of bread, meat, vegetables and coffee. During the investigation the inspector was followed from house to house by the grocer's boy taking orders for the day's provisions. "You are doing a brisk business," the inspector remarked. "I should say I am," the boy replied, "I collect a hundred and fifty dollars around this neighborhood every two weeks."

Cheap lodging houses.

One of the most serious phases of the housing problem in Milwaukee is that presented by the cheap lodging houses. The principal evils are insanitary old buildings, defective plumbing, lack of light and air, over-crowding, and the filthy condition of the rooms and beds. Particular mention has already been made of the scattered lodging and boarding houses frequented by foreigners, but special attention should also be directed to the condition and care of the permanent establishments furnishing cheap accommodations to transient lodgers. These advertise lodgings at 10, 15, 25 and 35 cents a night.

The 10 cent lodging consists of a bed whose only furnishing is a mattress, a quilt and a pillow, which in every case is filthy in the extreme. The 15 cent lodging consists usually of the same sort of bed with the addition of sheets and a pillow case, which are changed at varying intervals but never oftener than once a week. A 25 cent lodging is usually one in which fresh sheets and pillow case are furnished each new occupant; and a 35 cent lodging has the additional advantage of better light and ventilation and only one bed in a room.

The rooms themselves vary a great deal in size and the amount of ventilation and light. Many totally dark rooms were found, while others were in semi-darkness. These were rooms with regularly constructed partition walls. But in several of the Longshoremens' Lodgings on Clinton, Reed and South Water streets the rooms consist of small cell-like compartments surrounded by a light board partition six and a half or seven feet high. In some cases heavy wire netting is stretched over the top of these rows of compartments and securely fastened to each partition. This device is to prevent thieving. Where these low partitions are used, each story consists of a single large room with windows at front and rear and contains four rows of cells, two through the center of the room and one along each side. Consequently the only light received by the small compartments is the diffused light of the room which enters them at the top. Each compartment is large enough to hold merely a cot or a single bed and a chair between it and the opposite wall.

The majority of the lodging house buildings are old and insanitary and the plumbing is defective. The floors in many buildings look as though they were never scrubbed. The janitor service is insufficient. The majority have no night watchman. In only one case is there an attempt to maintain model lodging house conditions and this is in an establishment built and conducted on the Chicago lodging house plan. This building is modern and sanitary in its construction and appointments. Each floor has a regular janitor, and a watchman is employed at night. The management here makes considerable effort to prevent the spread of vermin or infectious or contagious disease, but such precautions are rare in the other establishments. The County Hospital reported several cases of infection coming to it from a single lodging house, and an inspection of such establishments causes surprise that contagion or infection is ever avoided.

The city of Chicago has several lodging houses built especially to conform with those sections of the Illinois State Board of Health Act which relate to lodging houses, boarding houses, taverns and hotels in cities of the first class. (See Appendix.) The Municipal Lodging House, the Chicago Mills, built upon the plan of the New York Mills Lodging House, and the Acme No. I and Acme No. II are among the number. These are constructed with the four rows of cell-like compartments running the entire length of the room on each floor. These compartments are covered over the top with wire netting and, including the free space above each, allow every occupant 400 cubic feet of air space. The special sanitary regulations are of interest. Every bed is furnished with sheets and pillow cases which are changed at least twice a week. The floors of rooms, halls and stairs are thoroughly scrubbed twice a week. The entire establishments are fumigated every three months or oftener as occasion demands. In one case the fumigation continued for eight hours, 72 pounds of sulphur being burned on each floor. The Municipal Lodging House requires baths and the disinfecting of clothing as well as a careful record concerning each lodger. The Acme Lodging Houses use moss mattresses which are the most easily kept sanitary. The price of lodgings ranges from 15 to 35 cents.

A dilapidated barrack.

A three story frame building situated at No. — St. Clair street presented at the time of inspection an example of dilapidation and decay which in kind and extent exceeded any other in the city. The best authority available pronounced the building over forty years old. In the early days it had been used as a hotel but had at last degenerated into a neglected barrack, condemned by the City Building Inspection Department, but still allowed to stand and furnish a dwelling place for a shifting population who expected nothing from it save the shelter of its roof and walls.

Although many separate families and groups of men inhabited the building it was not divided into regular apartments and suites of rooms with kitchen facilities in each group as is the case in the other buildings mentioned. There were in this building twenty-seven rooms and a hall and open stairway through the center of the house from the first to the third story. To the right of the hall on the first floor were located one large room

and two small ones, apparently the dining room, pantry and kitchen of the hotel. Eight Hungarians had been living in the large room but had gone just previous to the inspection, leaving behind them a lidless stove, a bent iron bedstead and some rusty dinner pails. The walls were smoked and black, the floor was broken, allowing a view into a dark, damp hole below, and window panes were gone, which, however, caused involuntary ventilation of the place. To the left of the hall were two rooms inhabited by five Italians. One room was used exclusively as kitchen and dining room and the other contained three double beds and several wooden steamer chests.

The second story contained eleven rooms, which were occupied by nineteen people, all Italians. Only three rooms were used for sleeping purposes. Of the remaining rooms two were used as kitchens, two as coal bins, one as wood room, one as wash room and two as dining rooms. The inhabitants seemed to be divided into two groups, one composed of eight men, the other of a man, his wife, three children and six boarders.

The third story also contained eleven rooms which were occupied by twelve people, four Hungarians living by themselves, and eight Italians, a man, his wife, one child and five boarders. The twelve people used three rooms as sleeping rooms, two for storing fuel, two as kitchens, one as dining room (and card room), one as pantry and one for the making and drying of spaghetti. One small room was vacant and was used as the passage way to a window from which the garbage and waste water was poured onto the roof of a one story addition at the rear. The whole building was shockingly insanitary and structurally unsafe. The walls were bulged and the roof was sagged; the floors were black, broken and uneven with accumulated dirt; the plaster had fallen off in patches and gave forth the musty odor common in old buildings. No plumbing or sewer connection existed, and all water used in the building was secured from a well in the yard. The inhabitants seemed to be united in the opinion that carrying water to the second and third stories was quite enough trouble without carrying it down again, so all waste was disposed of through the windows. In one case to avoid the trouble of raising the window a pane was broken out and a trough put through, into which the garbage and sewage was poured and scattered over the yard below.

Defective drainage.

The most serious example of defective drainage is found in a group of tenements at No. — Twelfth street. This group of four buildings is located on a lot 100 feet front by 150 feet in depth, one house being at the front and the other three at the rear, forming three sides of a hollow square. The house on the front of the lot is a two story frame structure with a cellar entirely below lot level. The building, though old, is sanitary. It contains twelve rooms and is inhabited by 14 persons, the landlord, his son's family of 10 persons, and 3 lodgers.

The three houses on the rear of the lot are two story, frame structures. Every room in the three buildings has a window to the external air and receives plenty of light and fresh air. The principal evils are one-room over-crowding, insanitary conditions in the houses, inadequate closet provisions, and a defective exterior drain. One house containing ten rooms is inhabited by twenty people who are disposed in the following manner:

On first floor two rooms are occupied by a man, his wife and two children; two other rooms are occupied by four Slovak men who sleep in one room; the remaining room on first floor is occupied by five Slovak men. The second floor also has five rooms, three of which are occupied by six Slovak men, who use only two rooms as sleeping apartments; and the two remaining rooms are occupied by one man.

The second house contains twelve rooms and shelters twenty-three people:

On first floor three rooms are occupied by a man, his wife and two children, and the other three rooms by a man his wife and five children. On the second floor three rooms are occupied by a man, his wife and one child, and the remaining three rooms by nine Slovak men, who sleep in only two of the rooms.

The third house has eighteen rooms and shelters forty-one people.

On first floor three rooms are occupied by a man, his wife and six children; three rooms are occupied by four Hungarian men; and the three remaining rooms by eight Slovak men, who sleep in two rooms. On second floor three rooms are occupied by a woman and her son; three adjoining rooms are occupied by a man, his wife and baby, and eight boarders, all Slovaks; and the remaining three rooms are occupied by eight Slovak men.

Thus the four houses shelter ninety-eight people—sixty-three men, eight women and twenty-six children, twenty of whom are under fourteen years of age. Three outside water-closets are provided but one is kept locked by the landlord, leaving only two for the use of tenants. No water is introduced into the houses and all water used for drinking and domestic purposes is secured from a well in the yard. Between one of the houses and the alley is a catch-basin which disposes of the waste from this group of tenements. For years this catch-basin has been clogged, the sewage draining over the top, down the alley, across the cement sidewalk and onto the public street.

Insanitary basements.

One of the worst examples of insanitary basements was found at No. — Cedar street, in a two story brick building. The first story was occupied by two saloons, a wood-working shop and a vacant store. The second story was occupied by three apartments and a Greek lodging house connected with the saloon below. The two interior apartments on the second floor received light only in the front and rear rooms. The middle rooms were dark. In one apartment a sick woman attributed her illness to the insanitary condition of the basements. The basements under the two saloons were in a shocking condition. In each case the ice box was allowed to drain from the first floor directly into the basement and no attempt was made to drain this room. Water covered with a green slime stood upon three-quarters of the floor. The remaining part of the room was covered with filth and rubbish whose offensive odor was apparent as soon as the cellar door was opened. No light or fresh air was allowed to enter this room which was almost entirely below curb level. All of the tenants on second floor complained of the condition of these basements or cellars, and said that the landlord had made no attempt to remedy conditions. At last the Health Department was notified and at present the tenants are awaiting results.

Sinks and closets in public halls.

An illustration of the tenement house evils, sinks and closets in public halls, was found at No. — South Water street. This is a four story brick building with basement, occupying the entire lot with the exception of a space about four feet wide between the rear wall and the rear lot line. The first story is oc-

cupied by three saloons and three kitchens. The second story contains Longshoremen's lodgings and sleeping rooms for the families conducting the saloons. The entire third and fourth stories contain apartments for families. No water is introduced onto the fourth floor and the tenants there are obliged to carry water from a sink at the rear end of the public hall on second floor. No closets are provided for the fourth story, the tenants there having access only to the two public closets in the hall on second floor. The plumbing in both closets and sink is defective.

In addition to this evil the building contains a considerable number of dark rooms. Eight rooms have no other opening than the door, and eight others receive a limited amount of light from windows openings upon halls which are themselves inadequately lighted. Some of these rooms were constructed in this manner when the building was erected, but others are the result of inadequate alterations for the purpose of installing a large number of small cell like rooms to be used as lodgings.

Dilapidated rear dwellings.

From Chestnut street, the southern border of the Jewish quarter, to the first alley north of Grand avenue, and from Second and Third streets on the east to about Ninth street on the west, the interior of blocks and the rear of lots present an array of sheds, shanties, dilapidated dwellings and a general appearance of shiftlessness so foreign to the larger and better part of Milwaukee that the investigator feels himself transported to a strange city. This section includes the Negro quarter between Wells and State streets and Second and Sixth streets.

This is not a tenement house district, however, as the dwellings are small, few containing more than one or two families, and the number of basement dwellings is limited. But the small houses are crowded thickly on a lot, sometimes so closely that not a single square foot of free yard space remains. Other evils are dilapidation, dirt, improper drainage, defective plumbing or none, open basements which become the receptacle for all manner of rubbish and an accumulation of garbage in back yards. In some places the only method of securing water on the premises is from the hydrant in the back yard in the immediate vicinity of the garbage pile.

Among surroundings such as these it is not strange that health is undermined, that men and women degenerate, that child-life is made sordid.

Situated so near the heart of the business district of Milwaukee, land values in this section are high. Present rents are high, considering the housing accommodations furnished. (A statistical study of rents is not published here as it would be of little use in forming judgment without an exact description of the size, location and condition of each apartment.) A great deal should be done immediately to improve the sanitary condition of the district. But it is doubtful whether any movement to make it a model residence district would be successful or commercially profitable. The majority of the people at present living there would be unable or unwilling to pay the advanced rents which would naturally be demanded for small model dwellings. The redemption and improvement of the section would seem to lie in its use for the erection of business blocks or manufacturing plants, some of which have already found location there.

STATISTICAL STUDY OF MILWAUKEE'S TENEMENT HOUSES.

Since it seems to be the intent of the law that this report shall deal with buildings known as tenement houses in the common meaning of the term, the main body of the report is concerned with that subject. But as the number of multiple houses, legally classed as tenements, is rapidly increasing in number in Milwaukee, it seems fitting to include in this report a tabulated statement concerning buildings of the sort.

Table I includes all multiple houses erected during the years 1898 to 1905, inclusive. Many multiple houses were erected before that time, but concerning these it is impossible to secure details.

TABLE I.
Houses containing more than one apartment.

Year.	Number of buildings according to number of apartments.																Total No. of houses.	
	2	3	4	5	6	8	9	10	12	13	16	17	19	20	24	35		37
1898.....	205	...	7	...	...	1	...	...	...	...	2	...	...	...	...	...	...	215
1899.....	194	2	9	...	1	...	...	...	...	...	...	...	...	...	1	...	...	207
1900.....	171	1	3	...	...	2	...	...	...	...	...	...	...	...	...	1	...	178
1901.....	200	1	6	...	1	5	...	...	...	...	1	1	...	...	1	1	...	216
1902.....	210	3	4	...	...	4	2	...	1	1	...	...	...	2	...	...	...	228
1908.....	252	1	3	1	1	2	...	...	2	...	...	...	...	1	...	...	...	263
1904.....	371	...	9	...	3	...	4	...	...	2	...	1	1	...	...	...	1	392
1905.....	557	3	11	1	1	6	6	1	1	1	2	1	...	2	...	...	...	594
Total....	2160	11	52	2	7	20	12	1	5	4	6	2	1	2	6	1	1	2293
Per cent.	94.0	0.5	2.3	0.1	0.3	0.9	0.5	0.05	0.2	0.2	0.1	0.1	0.05	0.1	0.3	0.05	0.05	100

This table shows the largest number of multiple houses erected during the last eight years to be those with two apartments, the number being 2160, or 94 per cent of the total number of multiple houses. The next in order are buildings of four apartments, 52 in number; and following those are buildings of eight apartments, 20 in number. The number of buildings containing eight and nine apartments exceeds the entire number of larger buildings containing from ten to thirty-seven apartments.

To tabulate the tenement houses of Milwaukee according to location is exceedingly difficult as no distinct tenement house district exists and many of the so-called tenements are scattered in widely distant parts of the city. Two definite districts do exist in which are located a considerable number of tenement houses, and in which the population tends constantly to grow more dense. These are (1) the largest part of the Third ward, including about 27 blocks inhabited chiefly by Italians, and (2) a part of the Sixth, Ninth and Second wards including about 17 blocks inhabited largely by Jews. Since the tenements outside of these districts can be grouped neither by wards nor by the nationality of the inhabitants they will be mentioned in the tables as "Scattered tenements."

Table II includes these three groups of tenements and classifies the buildings according to material, size and location on lot.

TABLE II.

Buildings containing or intended to contain three or more families and classed commonly as tenement houses.

LOCATION.	Number.	MATERIAL.			STORIES IN HEIGHT.						LOCATION ON LOT.	
		Brick.	Frame.	Brick & frame.	1	2	3	4	With base-ment.	Without base-ment.	Front.	Rear.
Third Ward—(Italian district).....	28	9	19	.....	.....	21	7	.....	24	4	25	3
Parts of Sixth, Ninth and Second Wards—(Jewish district).....	15	2	13	..	.....	14	1	.....	15	.....	15	.....
Scattered tenements.....	24	5	18	1	.....	21	2	1	15	9	17	7
Total.....	67	16	50	1	.....	56	10	1	54	13	57	10

Table II shows about three-fourths of these 67 tenement buildings to be of wood. The remainder are of brick, with the exception of one which is of brick and frame. Of the total num-

ber by far the largest proportion are two story buildings. Of the 67 tenements, 54 contain basements, although not all of these are occupied by living rooms as will be shown in a following table concerning basements. The large rear tenement does not prevail to any great extent, only 10 of the buildings considered being so situated. Rear dwellings are chiefly small cottages which were built there before the larger buildings were needed, or were moved back to make room for other buildings on the front of the lot.

TABLE III.
Concerning Apartments.

Location of Buildings.	Enumeration of the Houses According to number of Apartments.													Total.	Number of vacant Apartments.	Total Number of Apartments.
	Number of Apartments.															
	2	3	4	5	6	7	8	9	11	12	15	16				
Third Ward — (Italian district).....	2	11	7	....	3	1	1	1	....	....	1	1	28	23	138
Parts of Sixth, Ninth and Second Wards —(Jewish district).....	....	9	2	1	1	....	1	....	....	1	....	....	15	5	69
Scattered tenements. . .	....	5	9	3	3	....	1	....	1	2	....	....	24	11	112
Total.....	2	25	18	4	7	1	3	1	1	2	2	1	67	39	319	

Table III shows the buildings in each group tabulated according to the number of apartments in each. It also shows the total number of apartments in each group and the number vacant. In the Italian district the tenement houses of three apartments prevail in largest number; the next in order are houses of four apartments, and following those, the six-apartment houses.

In the Jewish district the houses of three apartments also predominate.

Of the scattered tenements the largest number are four-apartment houses.

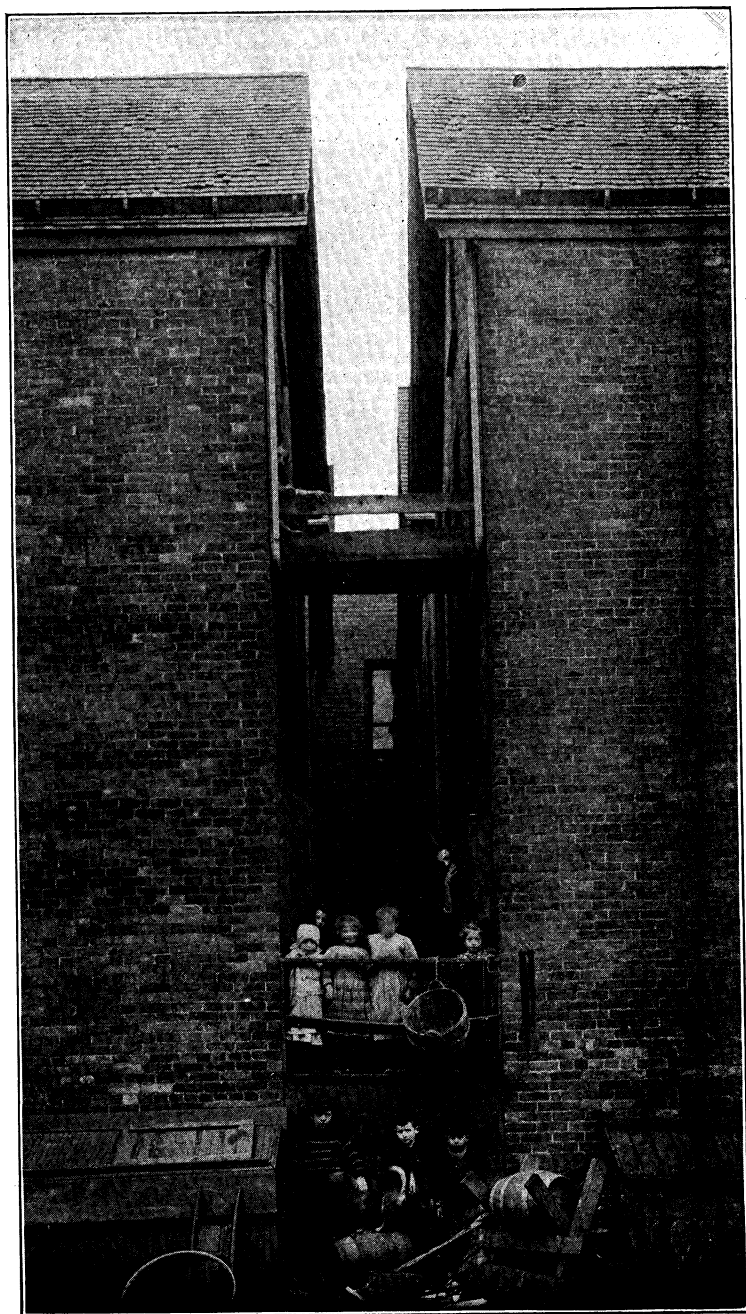
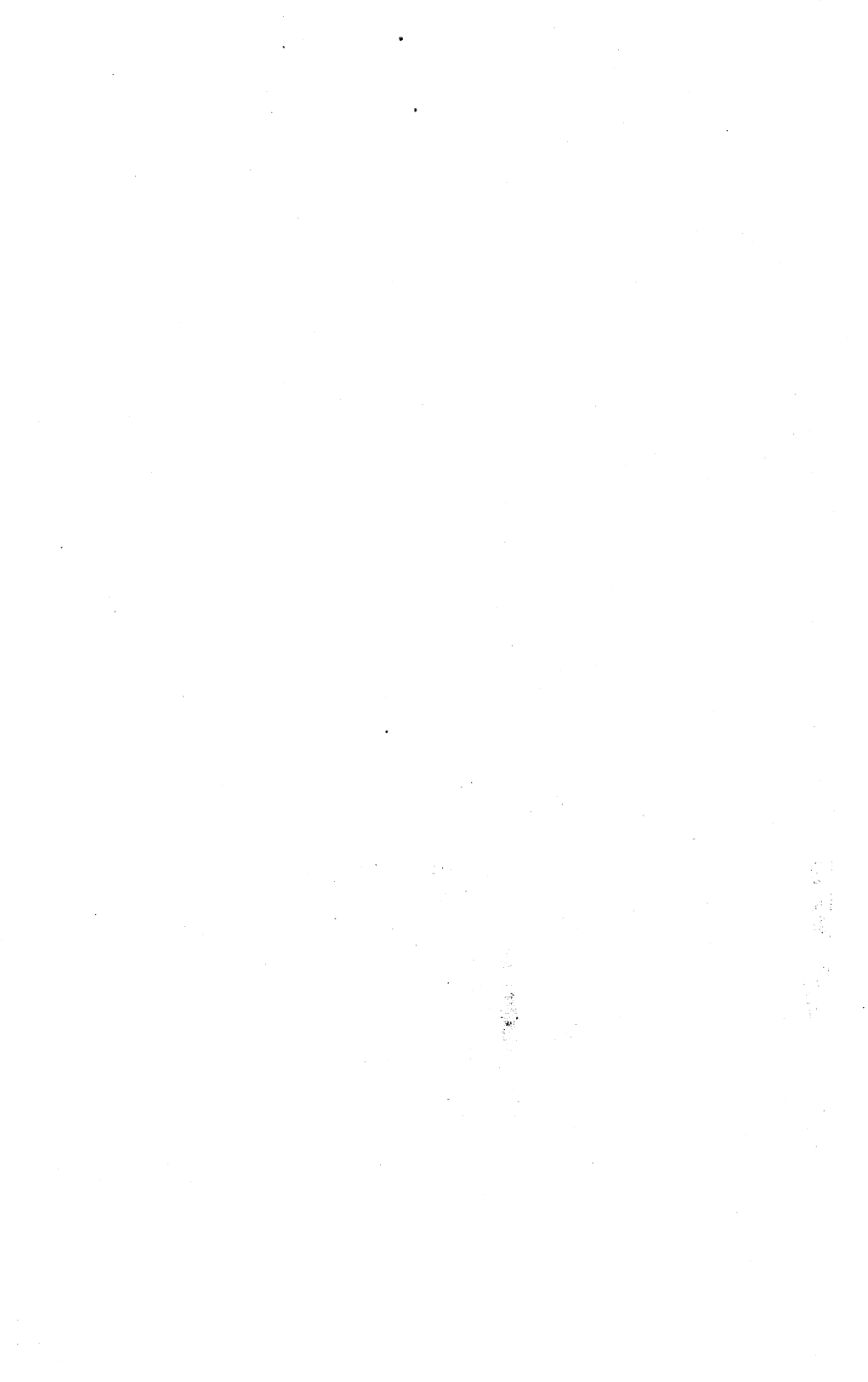


Illustration XIII.—Back-to-back tenements, four on one lot. Space between two front and two rear houses, 4 feet 11 inches. Basement dwellings below the level of the bridge on which the children stand. Lamps are kept burning throughout the day in rear rooms of basement and first story.



Illustration XIV.—Three story frame building occupied by forty-four persons. The building is structurally unsafe and without fire protection, plumbing or sewer connection. Between the time of first inspection and the time this view was taken the cornices had been patched, a trough taken in from a second story window, a new roof placed on the one-story addition, the basement boarded up and the front of the building painted.



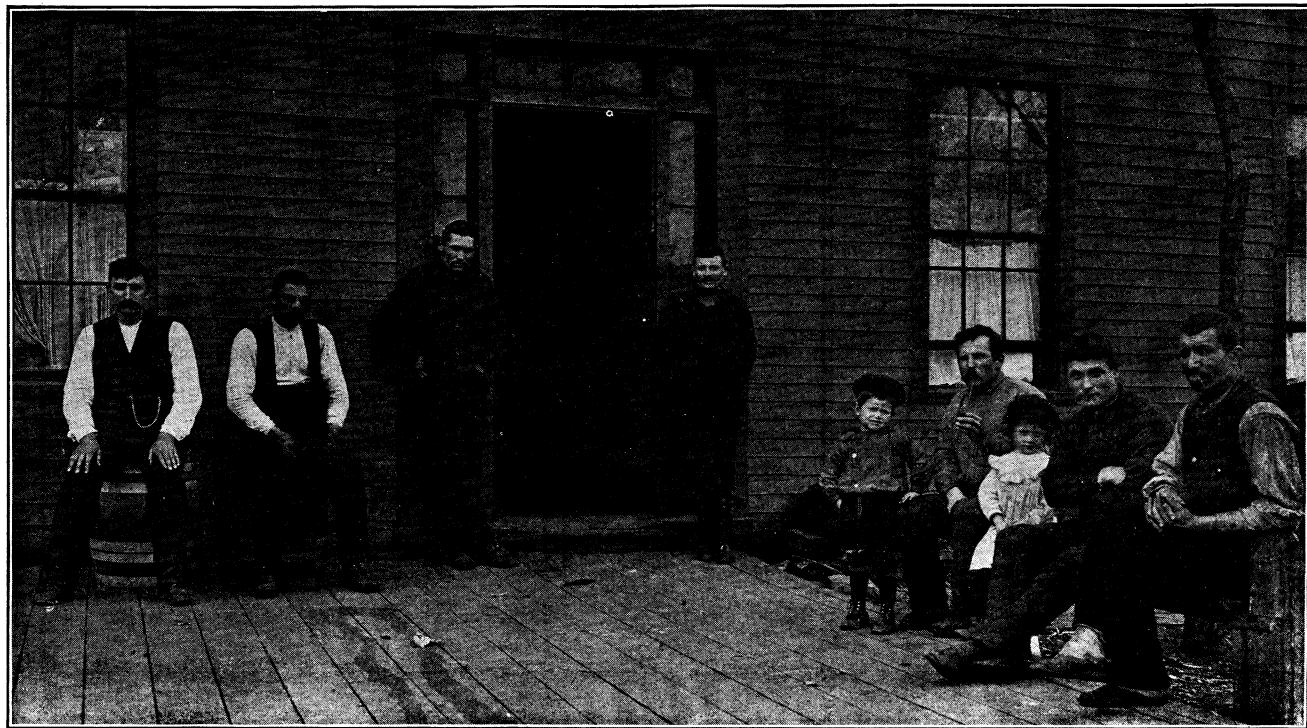


Illustration XV.—Entrance to hall and single stairway leading to the third story of the building shown in Illustration XIV. No exterior fire escape.

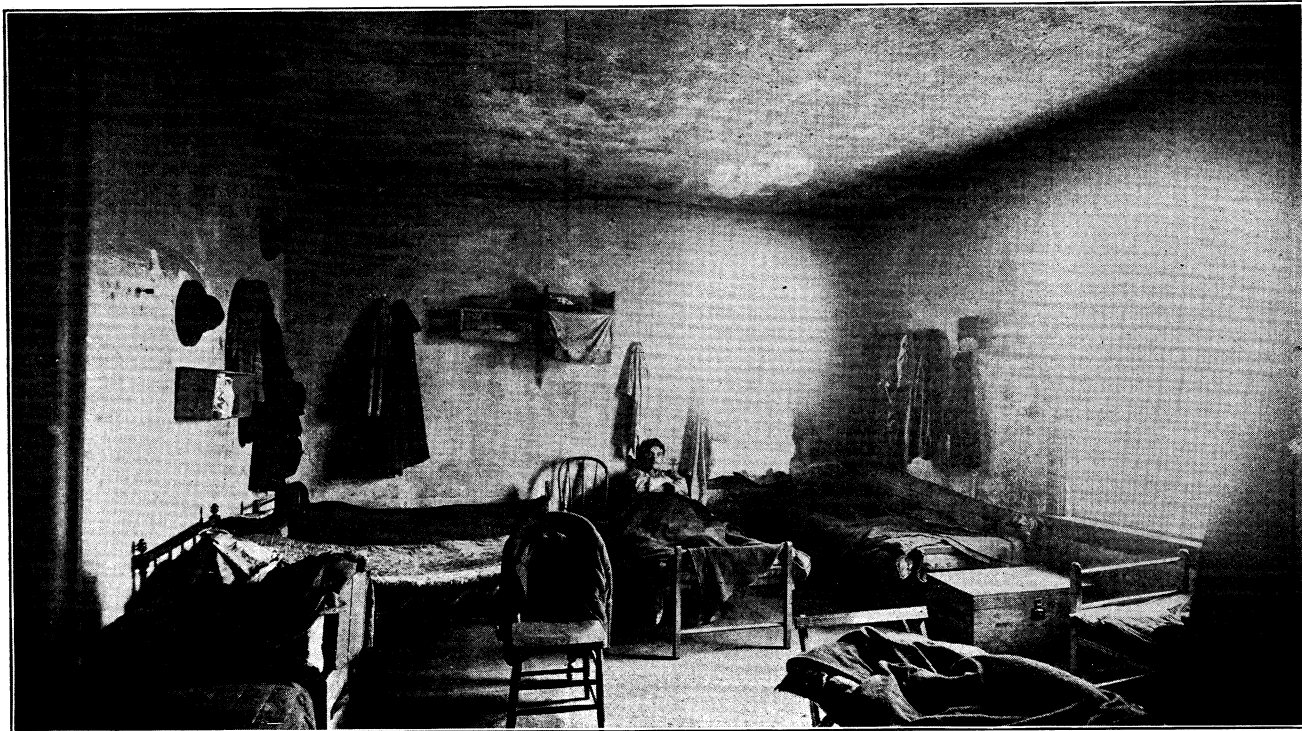


Illustration XVI. Sleeping room on second floor of building shown in Illustration XIV. The room is 16 feet long, 15 feet wide and 9 feet 6 inches high, and is occupied by seven beds and a mattress for an additional lodger. This allows 285 cubic feet of air space for each occupant. On the wall above the beds are box cupboards containing provisions. Wooden steamer chests fill the space under many of the beds. The occupants are Italians.

TABLE IV.
Inhabitants of tenement houses.

Location of building.	Occupants of Tenement Houses.				
	Number of families.	Number of people.	Lodgers.	Children.	
				1-7 years.	7-14 years.
Third Ward (Italian district)	116	669	181	87	84
Parts of Sixth, Ninth and Second Wards (Jewish district)	62	318	27	75	54
Scattered tenements	106	476	137	54	56
Total	284	1,463	345	216	194

Table IV gives a tabulated statement concerning the occupants of tenement houses. In the Italian district 116 families, including 669 people live in tenement houses. Of this number 181 are lodgers, 87 are children of seven years and under, and 84 are children between seven and fourteen years of age. In the Jewish district 62 families, including 318 people, live in tenement houses. Of these people 27 are lodgers, 75 are children of seven years and under and 54 are children between seven and fourteen years of age. In the scattered tenements are found 106 families including 476 people, and of these 137 are lodgers, 54 are children of seven years and under and 56 are children between seven and fourteen years. Thus the total number living in tenement houses includes 284 families, and 1463 people. Of the total number of people, 410 are children under fourteen years of age.

TABLE V.

Showing distribution of Nationalities in the tenements according to the number of houses in which they were found

Location.	American.	German.	English.	Polish.	Italian.	Irish.	Hungarian.	Austrian.	Hebrew.	Russian. (Other than Jews).	Greek.	Slovak.	Macedonian.	Bohemian.	Syrian.	Arabian.	Brazilian.
Third Ward.--(Italian district)	4	6	4	.....	16	.....	.....	1	.....	.....	.....	.....	.....	1	1	1	1
Parts of Sixth, Ninth and Second Wards. (Jewish district)	.....	1	.....	.....	.....	.....	.....	.....	15	.....	.....	.....	.....	.....	.....	.....	.....
Scattered tenements	3	18	1	8	2	1	5	.....	.....	1	1	6	1	.....	.....	.....	.....
Total	7	25	5	8	18	1	5	1	15	1	1	6	1	1	1	1	1

Table V shows the various nationalities living in tenement houses, according to the number of houses in which they were found. It was quite impossible to obtain the exact number of people of each nationality since all could not be interviewed, and the value of the table is only in showing the number of nationalities and the distribution in the different groups of tenements.

TABLE VI.
Stairs in tenement houses.

Location of buildings.	Buildings enumerated according to:—											Number of buildings
	Location of stairs.					Width of stairs.				Condition of stairs.		
	Inside.	Outside.	Both.	Front.	Rear.	Both.	2½ feet but not 3.	3 feet but not 3½.	3½ feet.	Structurally safe.	Unsafe.	
Third Ward (Italian district).....	11	5	12	9	5	14	19	9	.....	24	4	28
Parts of Ninth, Sixth and Second Wards (Jewish district).....	6	2	7	3	1	11	5	9	1	14	1	15
Scattered tenements.....	7	6	11	9	1	14	11	13	.. ..	24	.....	24
Total	24	13	30	21	7	39	35	31	1	62	5	67

Table VI gives a statement concerning stairways in tenement houses. Of the total number of houses 24 have inside stairways only, 13 have outside stairways only and 30 have both inside and outside stairways. Those buildings having only front stairs are 21 in number, those having only rear stairs are 7 in number; and those having both front and rear stairs are 39 in number. The majority of tenement houses have stairways between 2½ and 3 feet wide. While some of these stairways may be considered an insufficient means of egress, only five are structurally unsafe.

TABLE VII.
Sanitary condition of tenements.

Location of buildings.	Concerning rooms.						Concerning entire house.											
	Number of rooms.	Opening of windows.			Light and ventilation.			Plumbing in house.			Condition of house.			Habits of people.			Number of buildings.	
		Outer air.	Air shaft.	Rooms or halls.	None.	Good.	Fair.	Bad.	Good.	Defective.	None.	Sanitary.	Fair.	Insanitary.	Clean.	Fair.		Unclean.
Third Ward (Ital. district)	541	500	....	36	5	475	18	48	16	8	4	8	7	13	7	12	9	28
Parts of Sixth, Ninth and Second Wards (Jew. district)	265	240	....	21	4	241	6	18	10	3	2	3	2	10	3	2	10	15
Scattered tenements	425	366	....	45	14	381	12	32	10	5	9	8	3	13	8	6	10	24
Total	1231	1106	....	102	23	1097	36	98	36	16	15	19	12	33	18	20	29	67

Table VII shows the sanitary condition of tenements according to the light and ventilation of rooms, and other elements which affect the entire house. Of the total number of rooms, 1231, 1106 open directly to the external air, 102 open to other rooms or halls; and 23 have no light or ventilation. In 1097 rooms the light and ventilation is good; in 36 only fair, and in 98 very bad. Of 67, the total number of buildings, 36 have good plumbing, 16 have defective plumbing, and 15 have none. In 36 cases the buildings themselves are insanitary and in 29 cases the habits of the tenants are careless and unclean.

TABLE VIII.

Basement in tenement houses and number of families in basement dwellings.

LOCATION OF BUILDINGS.	BASEMENTS.																Number of families inhabiting basements.	
	Use.			Number according to—														
	Dwelling only.	Storage only.	Dwelling & storage.	Height in feet.						Number of entrances.								
				5	6	7	7½	8	6	1	2	3	4	6	8	10		Total.
Third Ward—(Italian district)	8	12	14	1	4	4	1	8	9	6	14	1	1	1	1	1	24	20
Parts of Sixth, Ninth and Second Wards—(Jewish district)	8	3	4	....	1	2	..	9	3	6	7	1	..	..	..	1	15	14
Scattered tenements	1	14	....	5	4	4	....	4	..	7	4	3	1	..	..	..	15	1
Total	17	29	18	4	9	10	1	21	9	19	25	5	2	1	1	54	37	

Table VIII shows the total number of basements to be 54. Of these, 17 are used for dwellings only, and 18 for storage and dwellings, a total of 35 used wholly or in part as dwellings. These 35 basements are inhabited by 37 families.

Of the total number of basements 21 are eight feet high, 10 are seven feet high, 9 are nine feet high and 9 are six feet high. The largest number of basements are provided with two entrances, although a considerable number have only one.

No tabulated statement is made concerning the height of ceilings above ground. In many cases a basement ceiling a few feet above curb level is the entire height of the basement above lot level at the sides and rear, so that a table according to height above curb level would be somewhat misleading as to the height of the ceiling above ground.

TABLE IX.

Condition of basements.

Location of Buildings.	Amount of light and ventilation.		Method of lighting and ventilating.				Sanitary conditions.		Total number.
	Sufficient.	Insufficient.	Windows.	Doors.	Openings.	No ventila- tion.	Good.	Bad.	
Third Ward.—(Italian district) ..	13	11	18	4	1	1	14	10	24
Parts of Sixth, Ninth and Second Wards.—(Jewish district)	9	6	1	.....	.....	1	3	12	15
Scattered tenements.....	9	6	8	3	.....	4	8	7	15
Total.....	31	23	40	7	1	6	25	29	54

Table IX shows the condition of basements. Of the total number, 31 have sufficient light and ventilation and 23 have insufficient light and ventilation; 40 receive light and air by means of windows, 7 by means of doors, 1 is open and 6 have no openings whatever to the external air. The sanitary condition in 25 basements is good and in 29 bad.

TABLE X.

Miscellaneous information concerning basements of tenements.

Location of buildings.	Provision for drain- age.	None.	Water in basement.	None.	Coal or wood.	None.	Ashes, refuse or garbage.	None.	Total.
Third Ward (Italian district)....	19	5	6	18	18	6	2	22	24
Parts of Sixth, Ninth and Sec- ond Wards (Jewish district)....	11	4	.....	15	6	9	1	14	15
Scattered tenements	10	5	8	7	12	3	1	14	15
Total.....	40	14	14	40	36	18	4	50	54

Table X gives miscellaneous information concerning base-ments. Of 54, the total number, 40 were drained, 14 had water standing on the floor, 36 contained wood and coal bins, and 4 contained garbage and refuse.

TABLE XI.

Showing kind, location and condition of closets.

Location of Buildings.	Kind.		L cation.			Light.		Ventila- tion.		Cleaned.			Condition.			Total Number.	
	Water.	Vault.	Yard.	Cellar.	Hall.	Apartment.	Sufficient.	Insufficient.	Sufficient.	Insufficient.	Regularly.	Irregularly.	Not at all.	Sanitary.	Fair.		Insanitary.
Third Ward— (Italian dis- trict).....	94	12	23	23		57	70	36	70	36	49	27	30	51	16	39	106
Parts of Sixth, Ninth and Sec- ond Wards— (Jewish dis- trict).....	36	1	14	9		14	19	18	20	17	10	15	12	17	1	19	37
Scattered tenements.....	47	9	27	16	2	11	31	22	30	26	19	24	13	29	10	17	56
Total	177	22	64	51	2	82	123	76	120	79	78	63	55	97	27	75	199

Of the 67 tenements considered, only one was found to con-tain bath rooms. This was a sixteen-apartment building where each apartment had a bath room which was built against a par-tition wall and received its light through a small window opening to the kitchen.

Only one of the tenements considered was provided with a fire escape. Four others to which the state fire-escape law applies were lacking fire escapes.

No tabulated statement is made concerning the condition of tenement house yards. At the time of inspection the majority of them were dry and clean. Hydrants were found in 5 and pumps in 7.

Chickens were kept on the premises at 10 places and horses at 8 places.

The tenements included in the tables contained the following places of business: 4 grocery stores, 2 meat markets, 2 shoe shops, 1 tailor shop, 1 tin shop, 1 electrical supply shop, 1 hay store, 7 saloons, 1 steamship ticket office and 1 doctor's office.

STATISTICAL STUDY OF A TYPICAL BLOCK IN THE FOURTEENTH WARD.

The report of the Department of Health of the city of Milwaukee for the year 1905, shows the Fourteenth ward to have the largest population (24,700) and the highest death rate per thousand (15.87) of all the wards in the city.

A study of vital statistics soon proves that that alone is an unsafe criterion for judging housing conditions. Too many other elements enter to affect the death rate. But since basement dwelling is common among the Polish inhabitants, as is also some over-crowding in the small cottages, a statistical study of a typical block in the Fourteenth ward is here presented.

TABLE I
Concerning material, size, location and condition of dwellings.

Material.		Height according to stories.			Basement		Location on lot.		Plumbing.		Sanitary conditions.			Total number.
Frame.	Brick and frame.	1.	1½.	2.	With.	Without.	Front.	Rear.	With.	Without.	Good.	Fair.	Bad.	

Table I shows that of 44, the total number of dwellings on the block, 41 are of frame and 3 of frame and brick. Nearly all of the houses are one story with basement. All except one are located on the front of lots. The proportions of those with and

without plumbing in kitchens are nearly equal. Sanitary conditions show 26 good, 15 fair and 3 quite insanitary.

TABLE II.

Dwellings classified according to number of apartments, rooms and families contained.

Number according to apartments.					Number according to rooms										Number according to families contained					Total number.
1	2	3	4	5	2	4	5	6	7	8	9	11	12	15	1	2	3	4	5	
17	23	2	1	1	1	4	10	7	2	11	4	1	3	1	22	17	3	1	1	44

Table II shows a predominance of 2-apartment dwellings, and the next in order, 1-apartment dwellings. Arranged according to number of rooms, the table shows a predominance of 8-room houses, the next in order being 5-room and 6-room houses. Twenty-two houses contain one family each, and seventeen contain two families. Only eight houses contain more than two families.

TABLE III.
Inhabitants.

Total number.	Lodgers.	Children.	
		7-14 years.	1-7 years.
377	21	64	88

The total number of inhabitants in the block is 377. Of this number 21 are lodgers, 64 are children from 7 to 14 years of age and 88 are children under 7 years of age.

TABLE IV.
Basements.

According to use.			According to number of families.				According to number of rooms.									According to number of entrances.			Total number.
Dwelling and storage.	Dwelling.	Storage.	0	1	2	3	1	2	3	4	5	6	9	1	2	3			
11	26	6	6	34	2	1	11	8	7	13	1	2	1	13	28	243			

Basements arranged according to use show 26 used for dwellings only, 11 used for storage and dwellings and 6 used merely for storage. Thirty-four contain but one family each, two contain two families and one contains three families.

The largest number of basements contain four rooms. A considerable number contain but one room, these, of course, including the basements used simply for storage. Twenty-eight have two entrances, which are from the outside, usually at front and rear.

TABLE V.

According to height of basement and height of ceiling above curb.

Number according to height.							Number according to height of ceiling above curb										Total number.	
5¾ ft.	6 ft.	6½ ft.	7 ft.	7½ ft.	8 ft.	9 ft.	1 ft.	3 ft.	3½ ft.	4 ft.	4½ ft.	5 ft.	5½ ft.	6 ft.	7 ft.	7½ ft.		8 ft.
1	6	3	9	1	18	5	1	3	3	10	1	10	1	10	2	1	1	43

The largest number of basements are 8 feet high, including 18 of the 43 dwellings. Nine buildings have basements 7 feet in height, and 6 are 6 feet in height. The basement 5¾ feet high is used for storage.

Since the lot level throughout the block is equal to the curb level, a tabulated statement is given showing the height of the basement ceiling above ground in the 43 houses containing basements. Ten buildings have basement ceilings 6 feet above the ground, 10 are 5 feet and 10 are 4 feet above ground. The basements one foot and three feet above ground are used solely for storage.

TABLE VI.

Closets.

Kind.		Location.				Condition.		Total number.
Water.	Vault.	Yard.	Cellar.	Hall.	Apartment.	Sanitary.	Insanitary.	
13	36	37	8	1	3	47	2	49

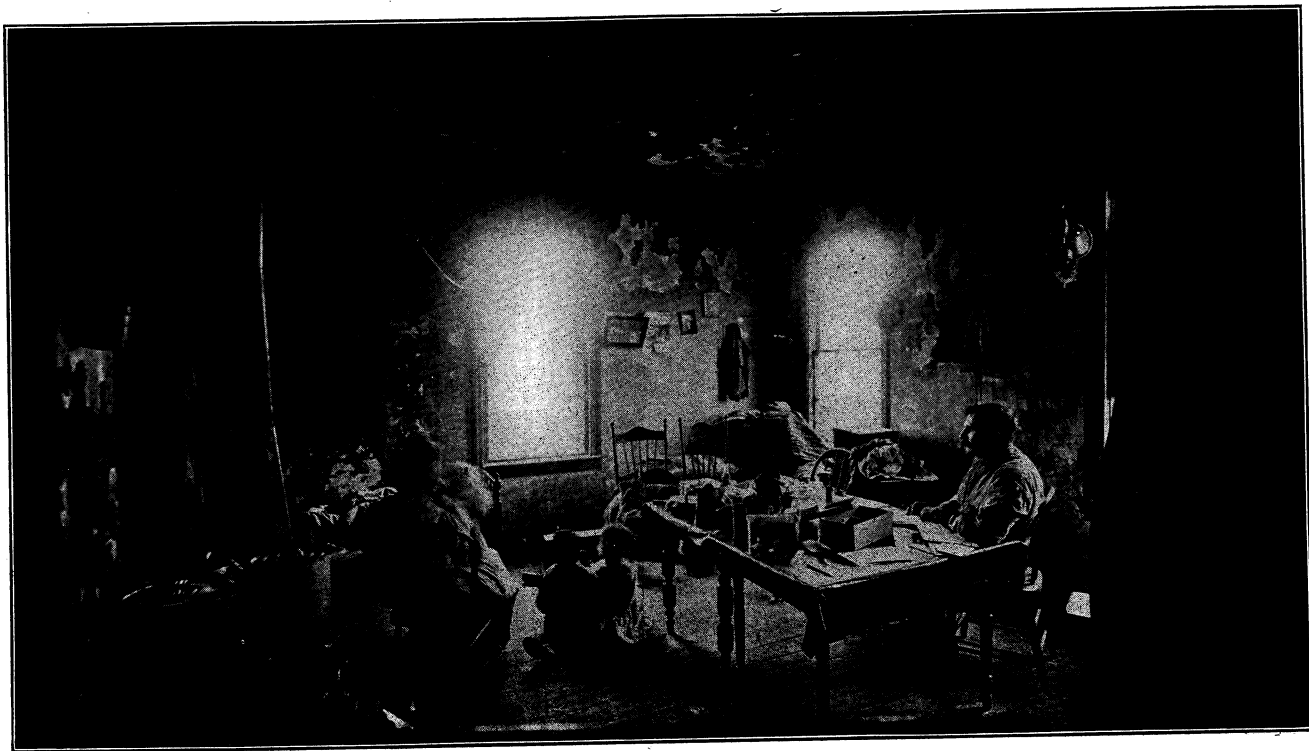
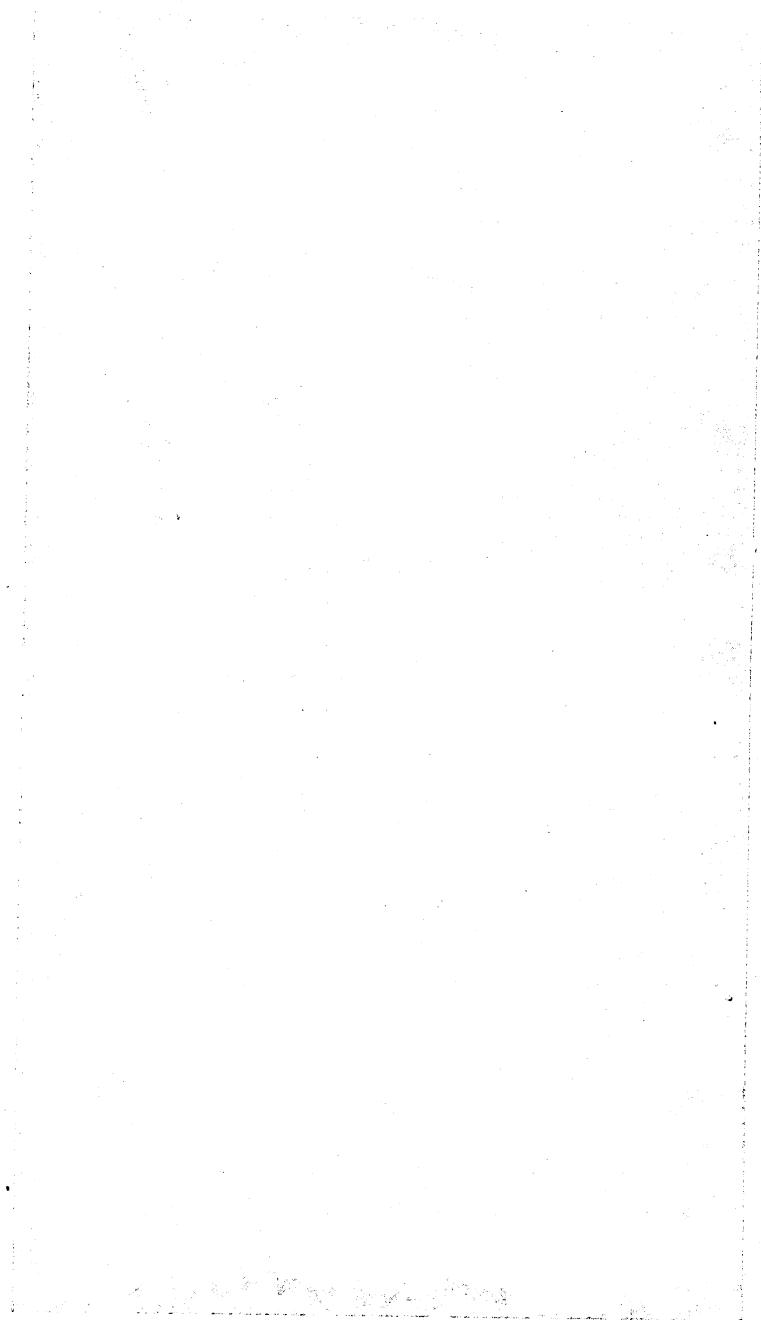


Illustration XVII. An Italian family living room in the building shown in Illustration XIV. The appearance of the walls is an index of the general sanitary condition of the apartment.



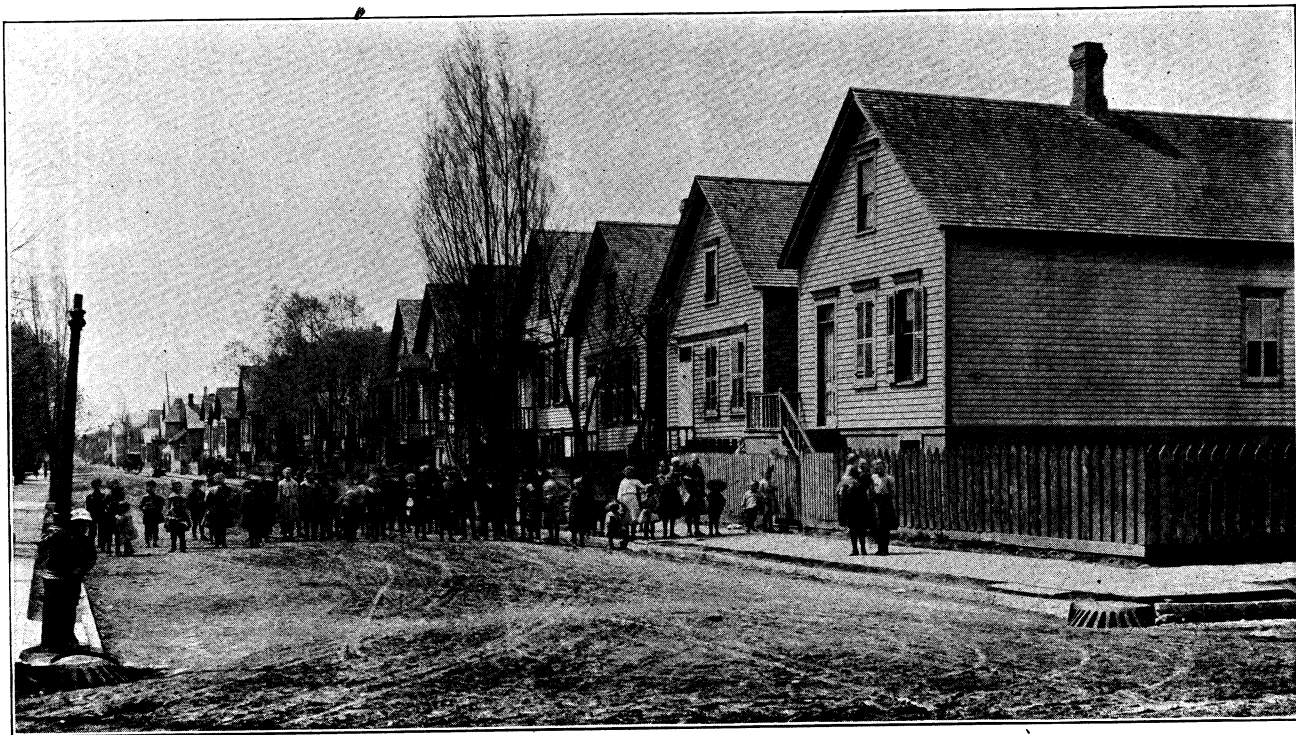
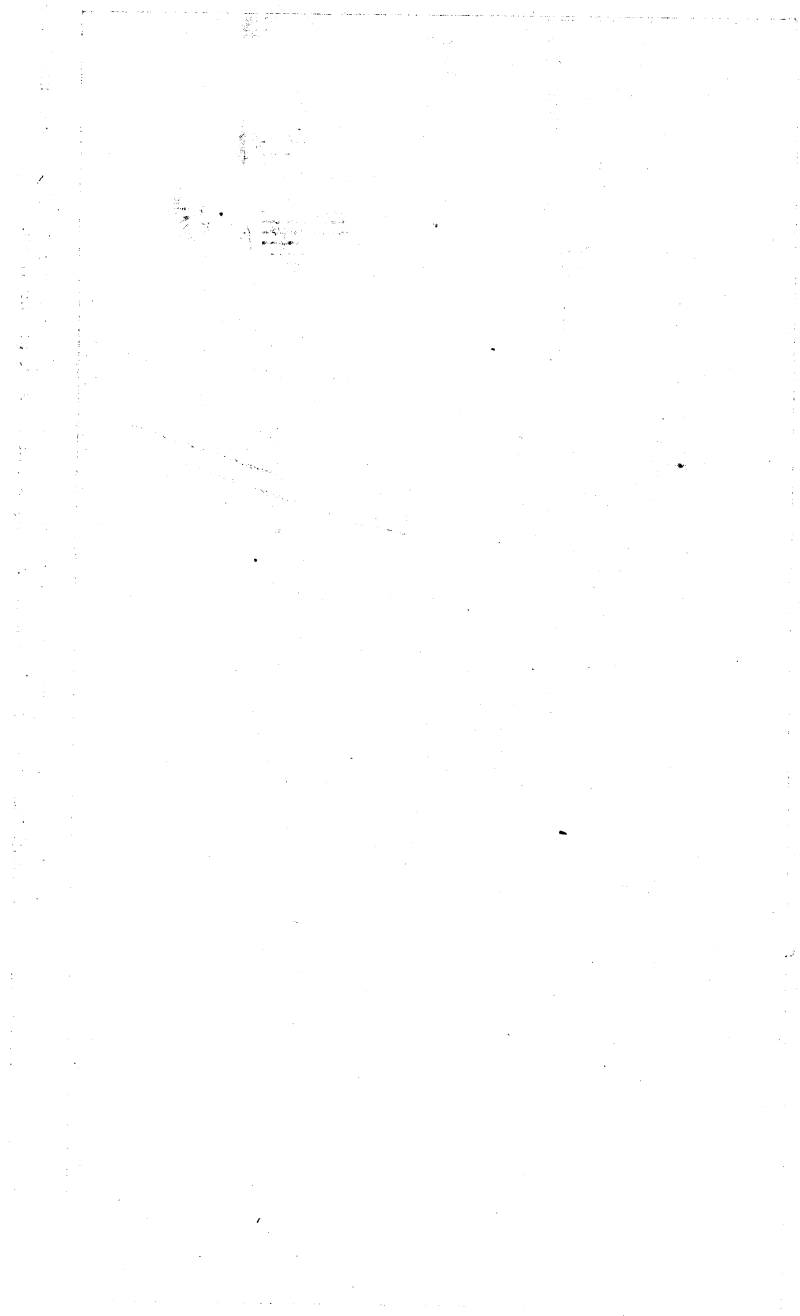


Illustration XVIII.—Typical cottages of Polish laboring men. The children in the foreground were playing in the street until the camera proved an attraction. Several “little mothers” with their charges can be seen among them.



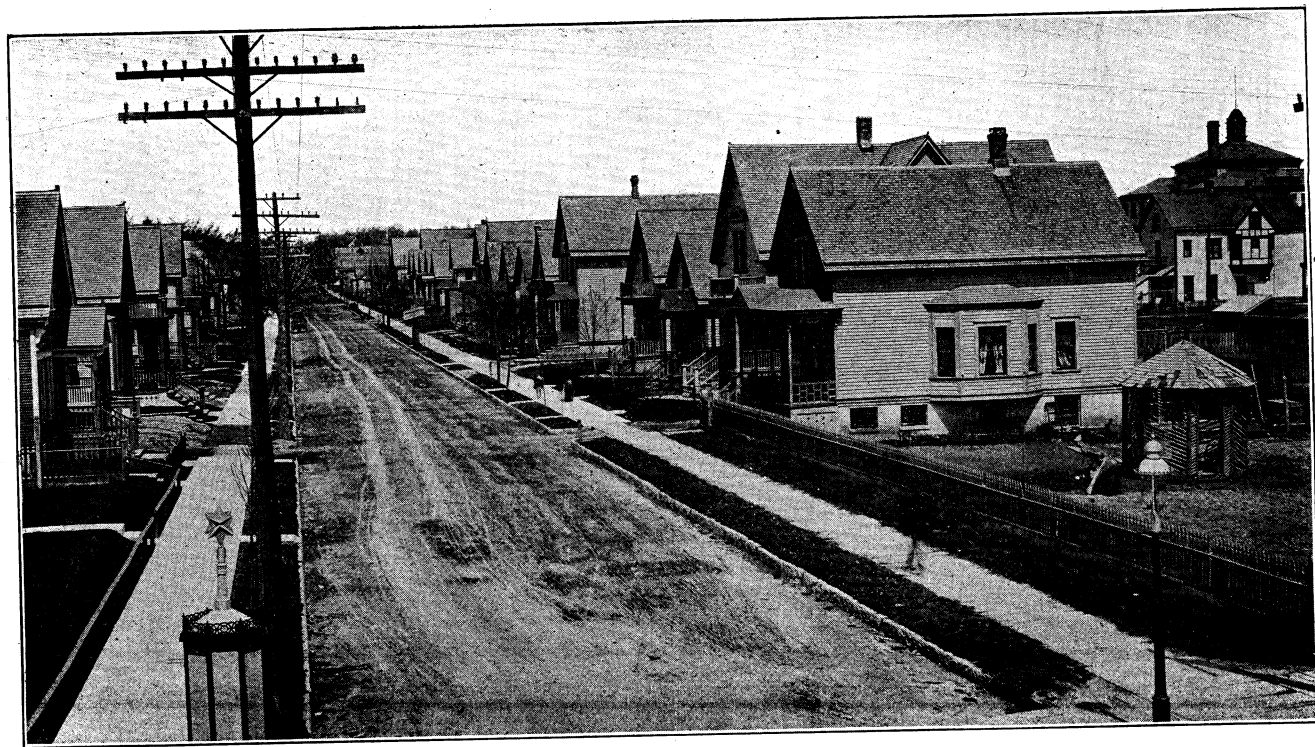


Illustration XIX. Typical cottages of German laboring men. Each house has a small yard in front and a garden at the rear.



SOME OBSERVATIONS ON THE FOREIGN POPULATION OF MILWAUKEE.

The majority of the foreign population of Milwaukee is German and Polish. The northern and northwestern sections of the city are settled almost entirely by Germans and here are found the typical homes of German laboring men which are shown in Illustration XIX. These people are thrifty and industrious, and seek as soon as possible to own the house and land which they occupy. The houses are so situated on the lots as to allow for a small yard at the front and a garden at the rear. The variation in architecture and decoration shows the exercise of individual taste in building. The houses are substantial structures furnished with all modern conveniences.

The Polish population covers nearly all of the southwestern section of the city including and beyond Mitchell street. In a few places north of Mitchell street they intermingle with the Germans; and a distinctly Polish district is found in the northeastern part of the city between Brady street and the Milwaukee river.

With few exceptions these people live in small frame houses, sometimes two stories high, but more often one story, with or without basement, as shown in Illustration XVIII. There is usually either one or two families in these houses; but frequently four or five families live in one house and take boarders. The houses are built well forward on a lot of 25 to 30 feet front, by 70 to 100 feet in depth. A space 4 or 5 feet in width exists between houses on adjoining lots. As most of the cottages have basement living rooms, the space between the front of the house and front lot line is chiefly occupied by the steps leading to the first floor. The rear of the lot is occupied either by another cottage similar to the one in front, or by a small barn, a chicken coop and a garden.

The Poles are thrifty and industrious but when out of work are sometimes given to quarrelling and pilfering. A very large number of the children go to the parochial schools where the language spoken is Polish. They leave these schools usually at the age of thirteen, and not being able to work lawfully until the age of fourteen, they do not enter the public schools but spend the intervening year around home.

The German desire of ownership and the Polish custom of

inhabiting small frame houses is probably what has given Milwaukee the reputation of being a city of homes.

The Italian population of Milwaukee has found its way into that part of the city formerly occupied by the Irish, who, since the Third ward fire and the incoming of the new people, have scattered over the city. At present, the Third ward south of Michigan street and east of Broadway is inhabited chiefly by Italians. These people are thrifty and industrious and are steadily improving in condition. The second generation is ambitious beyond the first. Some are moderately well to do. A few are commission merchants, others are small fruit and vegetable dealers, and a very large number are employed at street labor and railway construction. The Italian immigrants are chiefly unskilled day-laborers. Untidy they are in their habits but not destructive, and in the main they are sober, industrious and provident. Some drinking and hasty quarrelling occurs among them, but they do not interfere with other nationalities; and the crimes committed are the result of quick anger. The children go to the public schools but only for a short time. As soon as they are fourteen years of age they are put at work in the factories to help support the family. They are quick to learn and readily pick up a speaking knowledge of English, but a large number of ignorant immigrants constantly add to the illiteracy among them.

Among the Italian inhabitants of Milwaukee there are found large numbers of men who have come to this country with the intention of remaining from three to five years and then returning to Italy with their savings.

The Hebrew population early invaded the territory occupied by Germans and developed a distinctly Yiddish quarter which today is bounded by Third and Ninth and Chestnut and Cherry streets. The district is continually pushing out its borders, however, and driving the German population still farther to the north and west.

The Hebrew immigrants are chiefly Russian and Hungarian Jews, who, like the Italians when they arrive, are most unclean in personal habits, and are willing to stand much over-crowding. But they, too, are industrious and frugal. They come to this country to remain and make a home. They are seldom given to drinking and violence. Their first business venture is as rag picker or peddler and from that humble beginning they often

accumulate the means of going into an established business. Sometimes they themselves become tenement landlords, but the inconvenience they once endured makes them hardly more ready to mitigate the inconvenience and suffering of their tenants.

The Greeks living in Milwaukee are congregated in small colonies which are scattered in various sections of the city. A considerable number live in the neighborhood of State and Cedar streets between Fifth and Seventh streets, but other colonies are found in the neighborhood of St. Paul avenue, and on and near the northern end of Grove street. Some of these colonies consist of groups of men numbering from six to twenty, living together in an old house on the rear of a lot, as shown in Illustration IV. Other colonies center about boarding houses connected with saloons run by Greeks. The latter kind of establishment is the more permanent.

The Greeks are largely employed in factory work. A few are proprietors of small shops, while the young men and boys have almost monopolized the industry of boot-blackening.

Where a number of Greeks establish themselves in some deserted building, the house and surroundings receive no care, and insanitary conditions flourish. Remonstrances of the City Sanitary Inspectors are met by sullen indifference or lack of understanding. Many of the Greeks are given to drinking and quarrelling, and while the majority of them expect to remain in this country only long enough to save from \$300 to \$500, their habits are hardly as sober and industrious as those of the Italians or Jews.

The Austrian and Hungarian colonies also center around some boarding-house of their nationality. Some of these establishments are in dwellings and are conducted by a man and his wife. But more often they are above an Austrian or Hungarian saloon where the boarders spend all of their leisure time and a considerable part of their money. In one Magyar boarding-house the men paid \$4.00 a week for board and lodging. This boarding house was connected with a saloon and was situated in a dilapidated and insanitary frame building. Lodging consisted of a bed in a room shared by six or eight men, and the only bedding furnished was a mattress, a quilt and a pillow. The only water introduced into the building was in the kitchen, which, consequently, was also used as wash-room.

Tradesmen in the neighborhood of these establishments say

that the foreigners pay their bills promptly and are considered good customers. Like the Italians, Greeks and Slovaks, many of the Austrians and Hungarians are here only for a few years to earn and save a little money and then return to their own country, while others come to take their place.

The Slovaks in Milwaukee are the least united of all the foreign nationalities. Very little is known generally about them. Many people designate them by the general name, Slavonians, but in Europe they are known distinctly as Slovaks and inhabit the southern slope of the Carpathian Mountains, Croatia and Moravia. It is believed that there are over 100,000 at present in the United States. Few Slovak women come to this country; but if a man is thrifty enough to bring his wife with him his earning capacity is doubled for he immediately starts a boarding house which is very much in demand as these people live by themselves and have little communication with other nationalities. Very few boarding houses are found among them in Milwaukee. Consequently they live in groups of from six to twelve men, inhabiting two or three rooms in any part of the city where they can find a house so old that the rent is low. Illustration VII shows such an establishment occupied by nine men. Two rooms only were used as sleeping rooms, one of which is shown in Illustration VIII. The rent for the three rooms was \$4.50 a month.

Fortunately the furnishing is scanty in these rooms occupied by men, as little or no care is given them. The sleeping rooms, however, are crowded, from two to five beds being found in a small room. Illustration VIII shows four beds in a room 15 ft. 2 in. long by 8 ft. 6 in. wide and 8 ft. high. Stored under the beds and in corners are wooden steamer chests with the steerage labels still intact. In addition, a tall wardrobe occupies a corner in the end of the room from which the picture was taken. The bedding in these Slovak establishments consists of a mattress stiff with dirt, an equally filthy quilt, and a pillow with a grimy red or blue cover or none.

The room used as kitchen has generally a cook stove, a pine table and a few chairs or boxes. The floor is covered with dirt and refuse. On the stove is the empty coffee-pot and frying pan, and on the table a pile of unwashed dishes, a few crusts and half eaten loaves of bread remaining from the last meal, and pieces of raw meat still wrapped in paper. And over every

thing flies swarm at their scavenger work before flying away to the kitchens of more cleanly inhabitants or to the public fruit and vegetable markets. This last element suggests a very obvious connection between the alley and the avenue.

FIRE-ESCAPES ON TENEMENT HOUSES.

Tenement houses are primarily intended for the housing of a large number of people in a limited area. Such buildings shelter, by day and by night, people of all ages and conditions, from the young and helpless to the aged and infirm. For such buildings, surely, the necessity for fire protection, and adequate fire protection, is plainly apparent.

Many cities and states have laws requiring fire escapes on all flat buildings, tenement houses and lodging houses, more than two stories high. But the details concerning size, quality, construction, and the choice of ladder or stairway, are left to the discretion of the local fire department, the district police or the state factory inspector. Manifestly, under conditions such as these there can be little uniformity in the enforcement.

The unsteady vertical ladder should never be permitted on tenement houses. And the vertical ladder, attached to the outer edge of a balcony without a manhole, (thereby necessitating climbing over the railing and grasping the ladder from the outside) is certainly a menace rather than a protection to the lives of women and children.

The present fire-escape law of the state of Wisconsin requires an iron fire-escape on every tenement house more than two stories high designed for occupancy by twenty-five or more persons. This, of course, covers the larger apartment and flat buildings but it leaves a large number of buildings more than two stories high, occupied on the third floor by living rooms and sleeping rooms, without fire protection. The larger, flat buildings have front interior stairways and rear exterior stairways as well as iron fire-escapes, usually on the front. The smaller flat buildings, while not containing enough people to legally demand a fire-escape have an added danger in that the stairways above the second floor are usually narrower, although in the better class a front and a rear stairway are to be found. In the older class of tenement buildings it is not unusual to find that the third floor is reached by only one narrow stairway, while the

building itself, containing a little less than twenty-five persons, is without a fire-escape. Consequently if the single stairway should be cut off by fire all of the occupants of the third floor would be without means of escape. The danger of fire in these buildings is great, in that the buildings themselves are old and dilapidated, and stoves are used for heating as well as cooking. A few cases were found where tenements had two stairways above the second floor with only one available, the other being unsafe and in need of repair. The landlords had refused or neglected to make the necessary repairs as long as the other stairway was available.

All non-fire-proof buildings over two stories high which are used as flat buildings, tenement or lodging houses should be provided with iron stairway fire-escapes. If only one such fire-escape is provided, it should be on the front. The fire-escape is used by the firemen in reaching and rescuing tenants as well as by the tenants in leaving the building. Investigation has shown that the majority of tenement fires originate in the basement or the kitchen. Fires starting in the kitchen would cut off escape by means of a rear fire-escape. Architects and owners of buildings sometimes object to placing fire-escapes on the front of their buildings, claiming that it mars the artistic effect. To put up artistic fire-escapes or to construct the building fire-proof are alternatives which easily suggest themselves. And at all times a good fire-escape is a silent witness to the value placed upon the safety of human lives.

A fire-escape on the rear of a building or in a court is much more apt to become encumbered than one on the front where it is at all times open to public inspection. The sanitary inspectors of the health department are not concerned with fire protection of buildings; the duties of the police rarely take them into back yards and courts; the building department is occupied with the construction of new buildings and the condemnation of old ones structurally unsafe; the fire department is occupied with the extinguishing of fires, and the members are trained for this work. Consequently the work of inspecting fire-escapes to keep them unencumbered and easy of access is neglected until a fire occurs.

In some cities where tenement houses, lodging houses and other similar buildings are located side by side, the fire-escape law is surmounted by placing wooden bridges or narrow iron

gratings from one house to another across the court, air shaft, or open space. This is a money-saving and not a life-saving scheme. Any such narrow open space acts as a flue in conducting fires from floor to floor or house to house. And any such provision, besides being useless in case of fire, tends to obstruct the lighting and ventilation of lower rooms.

REAR TENEMENTS.

The rear tenement, whether large or small is to be found in every city of size. The general impression, acquired without investigation, is that a rear tenement is a building erected upon the rear of a lot, behind a store, tenement or dwelling house already erected upon the front. As a matter of fact, exactly the contrary is what has occurred. The rear building, in almost every case was on the lot first, whether originally built at the rear or moved back to make place for a new building on the front of the lot. Many facts support this theory, and none more strongly than the very apparent difference in the age of the buildings, which is evident in the method of construction, the system of plumbing, the sanitary provisions, and the degree of decay due to the action of the elements. The testimony of old residents whose memory reaches back to an early day bears out the theory with regard to rear tenements in the city of Milwaukee.

Investigation in other cities has shown the same condition. The New York Tenement House Commission of 1900 states that the original insurance maps of that city issued in 1852 show a great number of such houses located at the very back of the lot, with the whole front of the lot left entirely vacant, indicating clearly that it was customary at that time to erect dwellings at the rear of the lot, leaving the entire space at the front as a yard or garden. The Commission also calls attention to the fact that the first tenement house law of New York enacted in 1867 expressly prohibits the erection of a building on the front of any lot where there is already a building on the rear of the same lot, and the Commission maintains that if it had been the custom to erect the rear building later than the front one the law would have been expressed in exactly the opposite way.

Ever since the beginning of tenement agitation the rear tenement has been the subject of condemnation. Whether this is wholly warranted because of its location is open to dispute. The fact that one building is behind another, rather than beside it, does not condemn it. The question to be decided is, When are rear tenements good and when bad, and whence came the general impression that all rear tenements are bad?

In cities having rear tenements vital statistics have shown the death rate in this class of buildings to be very high, and that fact has been carelessly attributed to the type or location of the buildings. Any one studying the subject of vital statistics soon discovers that the death rate alone is an unsafe criterion by which to judge the housing or sanitary conditions of the various sections of a city. Too many other elements affect the death rate. Race characteristics, occupation, diet, relative ability to procure proper nourishment and protection against climatic change, all these elements, as well as the sanitary condition of the dwellings and surroundings, enter into the subject of the death rate. In the city of Washington, for instance, the death rate in the rear tenements and shanties along her complex alleys is high, and in those sections occupied by Negroes it is highest. It is a well known fact that people of mixed race are less able to withstand disease than those of distinct race. A striking example of this is found among the Mulattoes and other Negroes of northern cities who are notoriously the victims of tubercular and other pulmonary diseases whose ravages they have not the vitality to withstand.

In New York a peculiar and apparently contradictory element has been found in the death rate for two distinctly tenement districts. In one ward the death rate was much higher than the death rate for the whole city, sometimes twice as great. In another ward one-half mile away the death rate was only one-half as great as the average death rate for the city. In the quarter having the highest death rate the houses were not as high, were less crowded, and were more sanitary than in the other. The explanation had to be sought, therefore, in other causes than the character of the buildings. Where the death rate was highest the population was chiefly

Italian, a race among which the death rate is generally high in this country. They do much of the excavation and trench and sewer digging,—work which through its dampness tends to lower the vitality of the body and make them more easily the victims of pneumonia, tuberculosis and other lung diseases; and they seem disinclined or unable to adapt their diet to our colder climate, trying in our northern states to live upon foods which have furnished sufficient vitality for the climate of Naples or Sicily.

The other district, more crowded and insanitary was inhabited chiefly by Jews and to race characteristics, occupation and cleanliness and healthfulness of diet must be attributed the lower death rate, in spite of insanitary surroundings.

One possible explanation for the high death rate in rear tenements may be found in the fact that these houses being generally first on the lot are the oldest, have less of the modern sanitary provisions and are more often in a state of dilapidation. Therefore the rents are lower, and the buildings soon become the shelter either of the poorest part of the population, who, unable to pay for better housing, are also underfed and ill-cared for; or else of a class able to pay higher rent, but whose standard of living requires no better housing conditions. Among both classes the rules of health and sanitation are unobserved, leaving them more liable to the inroads of disease.

Considering the moral standard maintained in rear tenements it is held by many that such buildings are at a disadvantage simply on account of their location, hidden behind higher buildings and away from public scrutiny; that the narrow, dark passage-ways and courts leading to them furnish hiding places favorable to the development of vice and crime. It is quite true that these alleys and passage ways, while coming under police surveillance, do not feel the salutary effect of constant public contact; and just as physical disease thrives best in close dark quarters, so moral disease flourishes easiest in dark and hidden places.

If it be proven true that the rear tenement house is at a disadvantage on account of its location, how much greater must be the evil of front and rear apartments in the same

building, in the style of the "dumb-bell" tenement, where the open passages, and courts are merely replaced by public halls, which have the additional evil of lack of light and ventilation.

One type of rear tenement which can not fail to be bad is the back-to-back tenement, one house facing upon the alley, back-to-back with the front house facing upon the street, with the space between the two houses varying from a few inches to a few feet, and the space between these two houses and the buildings on the adjoining lots reduced to the width of a man's hand. Windows opening upon such narrow air spaces are almost useless for lighting purposes in the lower stories, and leave the rooms in total or semi-darkness throughout the entire day. The space between the buildings becomes the depository for garbage, rubbish and waste, so that the existing windows which are quite useless for lighting become positively dangerous for purposes of ventilation and are permanently nailed up.

Such houses can be considered sanitary only when there is a space of 20 to 30 feet between the front and rear houses; when there is a yard of 10 to 15 feet in width across the entire lot back of the rear tenement; and when the space between the houses and buildings on the adjoining lots is sufficient to permit the removal of rubbish and the use of the windows for light and ventilation.

SANITATION IN TENEMENT HOUSES.

Owing to limited facilities available, no special scientific report is made on tenement construction or plumbing. Only general principles of plumbing, drainage, water supply, lighting and ventilation were applied in the inspection, with incidental attention to garbage disposal, cellars, yards and closets.

The inspection was confined to those buildings which from their condition and occupancy would naturally be classed as "tenement houses," in the common meaning of the term, including all types of tenement buildings from the old and dilapidated dwellings to those of new and safe construction which lack, however, the sanitary conveniences required by

the better class of flat and apartment houses; and it included also many of the cheap lodging houses and boarding houses conducted by foreigners, which establishments are so insanitary, so over-crowded and so numerous as to demand investigation and legislation. Adverse criticism is not based upon sentimental concern for the comfort of tenants. Only those conditions are demanded which will promote and preserve healthfulness, cleanliness and morality. And it is assumed that these ends are not subserved unless tenants are provided with buildings which are structurally safe and sanitary, proper water-closets, a pure and ample supply of water for drinking, washing and cooking, and with provision for the speedy and safe removal of all waste.

Roofs, ceilings, walls.

Houses were occupied in which the roofs were sagged and leaking, allowing rain to penetrate to the ceiling and causing the plaster to fall. Tenants reported that the landlord or agent refused to make repairs. Many dwellings showed that in spite of the passing of years and the frequent change of tenants no painting, papering or whitewashing had been done. This common and necessary means of disinfecting should be made compulsory at frequent periods; and whenever wall paper is placed upon a wall or ceiling, all existing paper should be removed and the walls thoroughly cleaned.

Water supply, sinks and baths.

The water supply in the majority of the buildings examined was secured at the sink in the kitchen, or, where water was not introduced into the building, from a hydrant in the yard. In a small number of cases, sinks were found in the public halls, but these were in very old tenements or buildings not originally intended for that purpose, but later partitioned off into apartments.

Sinks were of cast iron or sheet metal. If of the latter type the space below was cased up and in many instances the wood work was damp and decayed. The waste pipes were trapped with lead bend traps close to the sink. In the majority of cases the water supply was found to be sufficient, although several cases were presented in which the pressure

was strong enough to supply only one floor or apartment at a time.

No fixed wash tubs were found in any of the houses inspected. The tenants used wooden tubs placed on chairs in the kitchen.

Bath tubs were found in only one of the houses inspected, and this building showed by its general construction that some attention had been given to sanitation, light and ventilation, although the arrangement of rooms was faulty. Rents here ranged from \$10 to \$15 per month according to location and number of rooms. This therefore drew a better class of tenants, who reported that the bath tubs were much used, especially in hot weather. Tenants said that if a single shower bath was furnished it could be used by more than one family, but tubs could not be so used for fear of infection.

The soil, waste and vent pipes were, in the majority of cases, concealed from view between the walls or behind wood work. Exposed plumbing is at all times safer and better. In such case, the original work is apt to be better and in case of defect or accident can be more readily inspected and repaired.

Cellars.

The condition of cellars in tenement houses is of much importance since the air from cellars is distributed more or less through the whole building. Many of the cellars inspected were totally dark or else badly lighted and unventilated. No artificial means of lighting was provided so that even in the day-time it was necessary to carry light into them. Considering the amount of paper and rubbish found in many cellars, and the careless way in which tenants used matches there at the time of the inspection, it is astonishing that more fires have not started in tenement cellars than are shown by the reports of the local fire department.

In the majority of cases the entrance to the cellar was from the public hall or from the outside. A majority of the cellars were dry at the time of inspection; many, however, were damp, and an unfortunately large number were wet, some with pools of water standing on the floor. It is quite probable that many of these cellars are flooded during rainy sea-

sons, and in several instances tenants stated that such was the case.

A very few of these cellars had cement floors. Many had wooden floors, and a large number had simply the earth with no floor covering. In a large number of cases there was no ceiling in the cellars, the floor beams being exposed so that dampness and odors could easily penetrate to the upper rooms.

Wood and coal bins, when not located in outside shelters were in the cellars.

Areas.

Front areas and window areas were often filled with leaves, waste paper and rubbish. Especially was this true where window areas were below the level of the sidewalk and the opening was covered with an iron grating, leaving the window the only means of entrance. Where the basement was used as a dwelling this condition became a more serious menace.

Yards.

The condition of yards varied largely with the character of the tenants or the business conducted upon the premises. In the Jewish quarter the premises occupied by peddlers, rag-pickers and junk-dealers were too often an advertisement of the occupation of the inhabitants. In addition, a stable containing horses was frequently found in close proximity to the basement windows of an adjacent dwelling. In the Italian quarter, also, ill-kept stables were found close to rear dwellings on premises occupied by fruit-venders.

Garbage disposal.

The present investigation has found the problem of garbage disposal only partially solved. Complaints were met in almost every quarter that garbage collections were altogether too infrequent, especially during hot weather. In some places tenants reported that garbage was allowed to stand for several weeks, until sickness resulted in the neighborhood, whereupon complaint was made to the Health Department. In certain places, particularly in the section already described west

of Second and Third streets the piles of garbage at the rear of dwellings, cheap lodgings, small shops and eating houses was mixed with boxes, lengths of stove-pipe, old hats, tin cans and other rubbish which furnished some excuse for its tardy removal by the Health Department. But the chief reason, apparently, for the infrequent removal of garbage is that the capacity of the City Garbage Plant is inadequate for the needs of the city. Only a limited number of loads can be disposed of daily; consequently every thing beyond that must remain uncollected.

THE RELATION OF HOUSING CONDITIONS TO TUBERCULOSIS.

In view of the proven fact that a definite relation exists between insanitary housing conditions and the spread of tuberculosis, and that the report of the Wisconsin State Tuberculosis Commission shows infected buildings to exist in the city of Milwaukee, which buildings have come within the scope of this investigation it seems fitting that reference should be made to the subject in this report.

Dr. George M. Kober of Georgetown University says, "It has long been known that scrofula, rickets and other chronic forms of tuberculosis are far more prevalent in dark, damp and insanitary houses. The children are anaemic and puny as plants reared without the stimulating effect of sun-light. Add to this the fact that dampness abstracts an undue amount of animal heat, lowers the powers of resistance, and favors the development of catarrhal conditions which render the system more vulnerable to tubercular infection and we have a reasonable explanation why these diseases prevail especially in basements or houses below grade or otherwise unfit for human habitation."

Tuberculosis takes many forms and may affect any organ of the body. It most often involves the lungs and is then called consumption, but in other forms it affects the skin, the lymph glands, the joints and bones, the throat, the intestinal canal, the coverings of the brain, or any of the other organs and tissues of the body. But whatever form the disease takes it is produced by the same agent, the tubercle bacillus. The form most easily communicable, however, is pulmonary tuber-

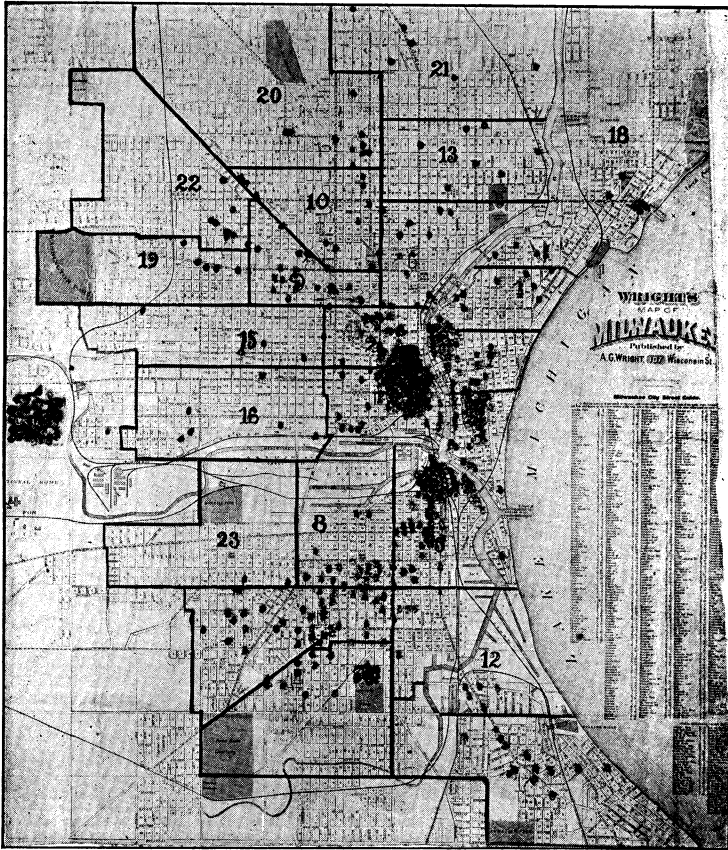
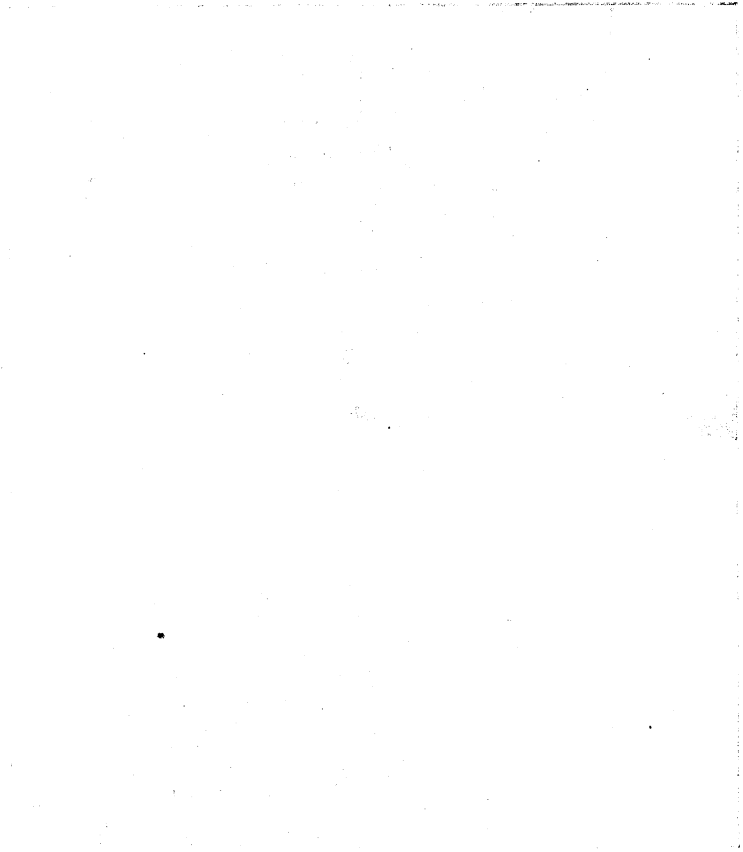


Illustration XX.—Map of Milwaukee showing location of tuberculosis cases treated at the County Hospital from 1893 to 1903. It is interesting to note how closely these tuberculous districts conformed with the districts covered in the investigation of insanitary housing conditions. (Map lent by Dr. Gustav Schmitt of the State Tuberculosis Commission, 1903-1905.)



culosis or consumption, for in this disease the germs in enormous numbers are constantly being thrown off from the affected part. Through the ignorance or carelessness of the sick person this disease-laden waste is allowed to lodge where it becomes dry and pulverized and in this way finally floats in the air to become a menace to the health and lives of hundreds of other people. Distant separation from affected persons is no sure protection from the disease. The dry germs will live for many months and may be carried by wholly unsuspected mediums to distant places. Sweat-shop clothing of all sorts may be made at home by tuberculous patients; men and women suffering with the disease will often work on in factories whose product is distributed broadcast to the public; clerks serving the public in stores may come from infected homes; germ-laden dust of the street may blow into fruit stand and market; and the public goes on, indifferent to the danger, allowing infected spots and disease-breeding conditions to exist and their victims to go about unhindered, spreading the means of death before they themselves succumb.

The degree of healthfulness of the community is of vast significance to every individual in it, for upon the general healthfulness the relative freedom from sickness and the probable lifetime of every individual depends.

It is believed upon careful estimate that the total number of deaths from tuberculosis in Wisconsin is between 2,100 and 2,200 per annum, and that the total number of cases at present existing is between 9,000 and 10,000, of which 1,800 to 2,000 reside in Milwaukee.* Since badly lighted, ill-ventilated, infected buildings are one of the most important elements in the development and spread of tuberculosis it is quite as necessary to wipe out the disease-breeding conditions as it is to treat the disease already established if the terrible White Plague is to be conquered, or even checked in its dissemination.

*Report of State Tuberculosis Commission.

THE NEED OF PARKS AND PUBLIC PLAY GROUNDS IN CROWDED DISTRICTS.

It is quite impossible to carry on an investigation of housing conditions in slum districts or crowded quarters without becoming impressed with the crying need of small public parks in such localities. For the regeneration of districts whose standards are low, for the maintenance of yet healthy physical and moral life carrying on the brave fight against adverse conditions, and for the sane and healthy development of the young life starting with the awful handicap of poverty, ignorance and neglect, the value of such public parks with their sunlight and pure air, their freedom coupled with order and cleanliness, can not be over estimated. The very difficulty of maintaining in them the regenerating qualities shows how great is the need of just such places.

In establishing such parks one of the chief factors to be reckoned with is the demand of child life, the necessity for some place distinctly set aside for recreation, a place for children to work off their abundant animal spirits in the natural form of play. Under present conditions many children in the city of Milwaukee have no such place except the alley and the street. In the first place, these places were not meant for play. They were meant for traffic. To use them as play-grounds is an encroachment on public utilities and will sooner or later be met by the interference of the law. To stifle perfectly natural and healthy impulses in this way, will, even in the mind of a child awaken revolt against unjust conditions which leaves for him no place, and will develop in later years that sense of hostility to the guardians of public order which in the end leads to the development of a criminal class.

To beautify a city by establishing large parks upon its outskirts and wide boulevards within its finest residence portions is a fitting tribute to civic pride; but it is false economy when done at the expense of human welfare in neglected unlovely places. Of what value in the everyday lives of children in the Third ward are Humboldt Park and Lake Park? And of what value in the everyday lives of children in the Second and Fourth wards are Washington Park and Mitchell Park? At most these parks can be the resort of the down town dwellers

only on Sundays and holidays and then only of those who feel able to spend the car-fare, which is always an item to be considered by the poor. To be of greatest value such breathing places should be within walking distance, and experience has shown that boys and girls, and mothers with little children will give up the trip if it is more than seven blocks, particularly if it is necessary to cross a busy thoroughfare. Beyond that little children can not be trusted to go alone.

There still remain, in some of the down-town districts of Milwaukee, open places which could be used for the establishment of public parks. In time, however, these will be built upon and so the remaining breathing places destroyed. If the public authorities are going to allow builders of flat and apartment houses to encroach so upon the yard spaces as to leave practically none, they will in time have to pay for their neglect by condemning and destroying what has been built. It is a long, difficult and expensive process to get whole blocks of insanitary buildings destroyed and the land acquired for public purposes. It would be far cheaper and much wiser to acquire the land while the need is known and the task easy.

CONCLUSION.

To describe the alleys, tenements and insanitary districts in Milwaukee is not to give the impression that Milwaukee is worse than other cities but to show that it is like all others in having a housing problem. And the subject becomes a problem when conditions have developed that call for state legislation to prevent their further development and to remedy existing evils. In any city amid luxury and wealth a slum element can develop. People of careless and undeveloped standards drift naturally toward the hidden places where they will not be disturbed. To allow the growth of a slum district is economically and morally a grave mistake. In it are bred poverty, misery and crime. It is a large factor in furnishing the recruits of the police courts, the hospitals and the almshouses. Sooner or later society must assume the burden and pay the penalty of its neglect.

One of the greatest factors in the redemption of the slum classes is the restoration of the family to its proper share of space, natural light and air and the cultivation of the domestic

art of cleanliness. Dr. John Griscom speaking of the latter, said, "The cause of unclean habits among the poor is not to be sought wholly in the preference for dirt or even a natural un-acquired negligence. Moral degradation, induced by circumstances of life, feelings of despair induced by utter poverty, the sight of suffering families never absent from thought, prostrate in many a desire for a better appearance and put out of their power more comfortable personal habits. Not the least potent among the causes, I think, may be ranked the uncertainty of the tenure of the home, which the unfeeling cupidity of the landlord may sever at any moment. From the narrow space of four bare walls and a broken ceiling a whole family may be expelled at a moment's notice upon the non-payment of rent at the precise time." Even where the poverty is not so great and where the blighting effect of despair has not yet entered, the effort to maintain cleanliness is a hopeless struggle in a contracted apartment occupied by many people, where the few rooms are put to every conceivable domestic purpose, where many families use in common the same entry, hall, stairs and yard, the last badly drained and filled with rubbish and offensive things, where children can play only in ill-kept streets and alleys, and where water, the great cleanser, is hard to come at.

It is a sad fact that the people whose occupations are among the grime and dirt have the poorest facilities for keeping clean. This is partly due to their own poverty, and partly to the indifference of landlords or employers who only draw incomes without discharging social responsibility. There is a class of people with more anxiety for gain than philanthropy, who through a few discouraging experiences are led to the general belief that the industrial classes have a passion for ruining what is good and new and that they are unworthy of conveniences and comforts.

There is another class, enthusiastic but misguided, who fancy in a vague way that the raw undeveloped classes have the same intelligence, and refinement, the same character and good judgment, which they see in others without realizing that it is the product of heredity, education and good environment. These look upon the great masses of immigrants constantly coming to our shores as unfortunates upon whom it is only necessary to precipitate ideal conditions to have them pursue an ideal existence.

Both these sorts of thinkers take the narrow view and come far from reality and practical action. There are large bodies of immigrated population among our laboring class in whom ignorance, uncleanness and a mean standard of living are inbred. But, nevertheless, the majority of them are our street laborers, and those who do the hardest, most drudging work in factory, mill and mine. They do a large part of our very necessary work and are a factor which cannot be overlooked or despised. Society is educating their children and so should society educate them to a higher standard of living which is compatible with health, decency and American ideals. This, their real education, cannot be provided by circulars printed in foreign languages and benevolently distributed among them. But patient enduring effort must force them to adopt, if they would live among us, a mode of life conducive to health, intelligence and morality and must provide the conditions and environment to make such life possible for them.

To that end then the State should exercise its jurisdiction to supply the lack of individual wisdom and justice in those who at present control the situation. The gain in public regulation made at a time when public opinion has been centered on the subject should not be lost when this influence is diverted and the field left open for selfish interests to assert themselves. Laws regulating housing and sanitary conditions should be comprehensive and explicit. No half-way measures should be allowed to postpone the realization of what is sane, healthy and moral. Discretionary power is not often to be trusted. In the majority of cases the exception becomes the rule.

All of the elements of unsatisfactory housing conditions exist to some degree in Milwaukee. And since they do exist the time is ripe for their inspection and public regulation. President Roosevelt has said of similar conditions that if a community does not realize and assume its legislative responsibility today it will have to pay a terrible penalty of financial burden and social degradation in the tomorrow.

To prevent the development of wrong conditions works no hardship to any one; to destroy them after they do exist does work hardship to some. A tenement and lodging house law, enacted now and applying to all cities of the first and second classes will in the years to come save the cities of Wisconsin

from the experience of larger places whose present over-crowding, poverty, disease and crime result primarily from the neglect of the habitations of the poor at a period when they could have been cared for successfully.

APPENDIX.

TENEMENT REGULATIONS OF NEW YORK.

Section 17. **Stairways.**—Each flight of stairs mentioned in the last three sections shall have an entrance on the entrance floor from the street or street court, or from an inner court which connects directly with the street. All stairs shall be constructed with a rise of not more than eight inches and with treads not less than ten inches wide and not less than three feet long in the clear. Winders will not be permitted except in a tenement house provided with a power passenger elevator. Where winders are used, all treads at a point eighteen inches from the strings on the well side shall be at least ten inches wide.

Section 18. **Stair halls.**—The stair halls in all non-fireproof as well as fireproof tenement houses hereafter erected shall be constructed as in this section and the two following sections specified. In tenement houses hereafter erected which either are occupied or are arranged to be occupied by more than two families on any floor, or which exceed four stories and cellar in height, the stair halls shall be constructed of fireproof material throughout. The risers, strings and banisters shall be of metal or stone. The treads shall be of metal, slate or stone, or of hard wood not less than two inches thick. Wooden hand rails to stairs shall be permitted if constructed of hard wood. The floors of all such stair halls shall be constructed of iron or steel beams and fireproof filling and no wooden flooring or sleepers shall be permitted. In tenement houses hereafter erected which do not exceed four stories and cellar in height and which also are not occupied or arranged to be occupied by more than two families on any floor, the stair halls shall either be constructed of iron beams and fireproof filling, or shall be filled in between the floor beams with at least five inches of cement deafening. In such houses the stairs shall be of iron or stone, or may be of wood, provided the soffits are

covered with metal lath and plastered with two coats of mortar, or with good quality plaster-boards not less than one-half inch in thickness, made of plaster and strong fiber and all joints made true and well-pointed.

Section 40. Combustible materials.—No tenement house, nor any part thereof, nor of the lot upon which it is situated, shall be used as a place of storage, keeping or handling of any combustible article except under such conditions as may be prescribed by the fire department, under authority of a written permit issued by said department. No tenement house, nor any part thereof, nor of the lot upon which it is situated, shall be used as a place of storage, keeping or handling of any article dangerous or detrimental to life or health, nor for the storage, keeping or handling of feed, hay, straw, excelsior, cotton paper stock, feathers or rags.

Section 58. Outer courts.—Where one side of an outer court is situated on the lot line, the width of the said court, measured from the lot line to the opposite wall of the building, for tenement houses sixty feet in height shall not be less than six feet in any part; and for every twelve feet increase or fraction thereof in height of the said building, such width shall be increased six inches throughout the entire height of said court; and for every twelve feet of decrease in the height of the said building below sixty feet, such width may be decreased six inches. Wherever an outer court exceeds sixty-five feet in length and does not extend from the street to the yard, the entire court shall be increased in width one foot for every additional thirty tenement houses hereafter erected not exceeding four stories and feet or fraction thereof in excess of sixty-five feet. Except that in cellar in height and which also are not occupied or arranged to be occupied by more than eight families in all, or by more than two families on any floor, and in which also each apartment extends from the street to the yard, the width of an outer court situated on the lot line shall not be less than four feet in any part provided that the length of such outer court does not exceed thirty-six feet.

Section 65. Rear tenements.—No separate tenement house shall hereafter be erected upon the rear of a lot fifty feet or less in width where there is a tenement house on the front of the said lot, nor upon the front of any such lot upon the rear of which there is such a tenement house.

Section 67. Rooms, lighting and ventilation of.—In every tenement house hereafter erected every room, except water-closet compartments and bathrooms, shall have at least one window opening directly upon the street or upon a yard or court of the dimensions

specified in sections fifty-three to sixty-five of this act, and such window shall be so located as to properly light all portions of such rooms. Wherever a room in such tenement house opens upon an inner court less than ten feet wide, measured from the lot line to the opposite wall of the building, such room shall be provided with a sash window, communicating with another room in the same apartment, such window to contain not less than ten square feet of glazed surface, and to be made so as to readily open. No tenement house shall be so altered that any room or public hall or stairs shall have its light or ventilation diminished in any way not approved by the department charged with the enforcement of this act.*

Section 68. **Windows in rooms.**—In every tenement house hereafter erected the total window area in each room, except water-closet compartments and bathrooms, shall be at least one-tenth of the superficial area of the room, and the top of at least of one window shall not be less than seven feet six inches above the floor, and the upper half of it shall be made so as to open the full width. No such window shall be less than twelve square feet in area between the stop beads.

Section 70. **Rooms, size of.**—In every tenement house hereafter erected all rooms, except water-closet compartments and bathrooms, shall be of the following minimum sizes: In each apartment there shall be at least one room containing not less than one hundred and twenty square feet of floor area, and each other room shall contain at least seventy square feet of floor area. Each room shall be in every part not less than nine feet high from the finished floor to the finished ceiling; provided that an attic room need be nine feet in but one-half its area.

Section 72. **Public halls.**—In every tenement house hereafter erected, which is occupied or arranged to be occupied by more than two families on any floor or which exceeds four stories and cellar in height, every public hall shall have at least one window opening directly upon the street or upon a yard or court. Either such window shall be at the end of said hall, with the plane of the window at right angles to the axis of said hall or there shall be at least one window opening directly upon the street or upon a yard or court in every twenty feet in length or fraction thereof in said hall; but this provision for one window in every twenty feet of hallway shall not apply to that portion of the entrance hall between the entrance and the first flight of stairs, provided that the entrance door contains not less than five square feet of glazed surface. In every public hall in such tene-

*(Tenement House Department.)

ment house recesses or returns the length of which does not exceed twice their width will be permitted without an additional window. But wherever the length of such recess or return exceeds twice its width the above provisions in reference to one window in every twenty feet of hallway shall be applied. Any part of a hall which is shut off from any other part of said hall by a door or doors shall be deemed a separate hall within the meaning of this section. In every tenement house hereafter erected where the public hall is not provided with a window opening directly to the outer air as above provided, there shall be a stairwell not less than twelve inches wide extending from the entrance floor to the roof, and all doors leading from such public halls shall be provided with translucent glass panels of an area of not less than five square feet for each door, and also with fixed transoms of translucent glass over each door.

Section 73. **Windows and skylights for public halls, size of.**—In every tenement house hereafter erected one at least of the windows provided to light each public hall or part thereof shall be at least two feet six inches wide and five feet high, measured between stop beads. In every such house there shall be in the roof, directly over each stair-well, a ventilating skylight provided with ridge ventilators having a minimum opening of forty square inches, or such skylight shall be provided with fixed or movable louvres; the glazed roof of such skylight shall be not less than twenty square feet in area. In tenement houses hereafter erected where the stairs and public halls are not provided with windows on each floor opening directly to the outer air, the skylights shall be provided with both such ridge ventilators, and also with fixed or movable louvres or movable sashes.

Section 82. **Public halls.** In every tenement house a proper light shall be kept burning by the owner in the public hallways, near the stairs, upon the entrance floor, and upon the second floor, above the entrance floor of said house, every night from sunset to sunrise throughout the year, and upon all other floors of the said house from sunset until ten o'clock in the evening.

Section 91. **Basements and cellars.** In tenement houses hereafter erected no room in the cellar or in the basement shall be constructed, altered, converted or occupied for living purposes, unless all of the following conditions are complied with:

1. Such room shall be at least nine feet high in every part from the floor to the ceiling. Provided, that in buildings already erected and not now used as tenement houses but hereafter altered or converted to such use, such room shall be not less than seven feet high in every part.

2. The ceiling of such room shall be at least four feet and six inches above the surface of the street or ground outside of or adjoining the same.

3. There shall be appurtenant to such room the use of a separate water-closet, constructed and arranged as required by section ninety-five of this act.

4. Such room shall have a window or windows opening upon the street, or upon a yard or court. The total area of windows in such room shall be at least one-eighth of the superficial area of the room, and one-half of the sash shall be made to open the full width, and the top of each window shall be within six inches of the ceiling.

5. All walls surrounding such room shall be damp-proof.

6. The floor of such room shall be damp-proof and water-proof.

Section 94. **Water supply.** In every tenement house hereafter erected there shall be in each apartment a proper sink with running water.

Section 95. **Water-closet accommodations.** In every tenement house hereafter erected shall be a separate water-closet in a separate compartment within each apartment, provided that where there are apartments consisting of but one or two rooms, there shall be at least one water-closet for every three rooms. Every water-closet and bath hereafter placed in any tenement house shall be placed in a compartment completely separated from every other water-closet and bath; such compartment shall be not less than two feet and four inches wide, and shall be enclosed with plastered partitions, which shall extend to the ceiling. In tenement houses erected after April tenth, nineteen hundred and one, such compartments shall have a window opening directly upon the street or yard, or upon a court or vent shaft. In tenement houses erected prior to April tenth, nineteen hundred and one, such compartments shall have a window opening directly upon the street or upon a yard, not less than four feet deep, or upon a court or shaft of not less than twenty-five square feet in area, open to the sky without roof or skylight. Every such window shall be at least one foot by three feet between stop beads, and the entire window shall be made so as to readily open. When, however, such water-closet compartment is located on the top floor and is lighted and ventilated by a skylight over it, or is located at the bottom of a shaft or court of lawful size, and is lighted and ventilated by a skylight over it at the bottom of such shaft or court, no window shall be necessary, provided the roof of such skylight contains at least three square feet of glazed surface and is arranged so as to readily open. Nothing in this section in regard to the separation of water-closet compartments from each other shall apply to a

general toilet room containing several water-closets hereafter placed in a tenement house, provided such water-closets are supplemental to the water-closet accommodations required by law for the use of the tenants of the said house. Nothing in this section in regard to the ventilation of water-closet compartments shall apply to a water-closet hereafter placed in a tenement-house, where it is provided to replace a defective fixture in the same position and location. No water-closet shall be maintained in the cellar of any tenement house without a special permit in writing from the department charged with the enforcement of this act,* which shall have power to make rules and regulations governing the maintenance of such closets. Every water-closet compartment hereafter placed in any tenement house shall be provided with proper means of lighting the same at night. If fixtures for gas or electricity are not provided in said compartment, then the door of said compartment shall be provided with translucent glass panels, or with a translucent glass transom, not less in area than four square feet. The floor of every such water-closet compartment shall be made water-proof with asphalt, tile, stone, or some other water-proof material; and such water-proofing shall extend at least six inches above the floor so that the said floor can be washed or flushed out without leaking. No drip trays shall be permitted. No water-closet fixtures shall be enclosed with any wood-work.

Section 97. **Basements and cellars.** Hereafter in any tenement house no room in the basement or cellar shall be occupied for living purposes without a written permit from the department charged with the enforcement of this act,* and such permit shall be kept readily accessible in the main living room of the apartment containing such room. And no such room in a tenement house erected prior to April tenth, nineteen hundred and one, shall hereafter be occupied unless all the following conditions are complied with. The said written permit shall be issued when all of the said conditions are complied with. If refused, the reason for such refusal shall be stated by said department, in writing, and a copy thereof shall be kept in a proper book in the office of said department, and be accessible to the public.

1. Such room shall be at least seven feet high in every part from the floor to the ceiling.
2. The ceiling of such room shall be in every part at least two feet above the surface of the street or ground outside of or adjoining the same.

* (Tenement House Department.)

3. There shall be appurtenant to such room the use of a water-closet.

4. There shall be outside of and adjoining such room, and extending along the entire frontage of at least one of the rooms of the apartment, an open space of at least two feet six inches wide in every part, unless such room extends for more than one-half of its height above the curb level. Such space shall be well and effectually drained.

5. Such room shall have a window or windows opening to the outer air of at least nine square feet in size clear of the sash frame, and which shall have been made to readily open for purposes of ventilation.

6. If the house is situated over marshy ground, or ground on which water lies, or ground on which there is water pressure from below, the lowest floor shall have been made water-proof and damp-proof.

7. Such room shall have sufficient light, shall be well drained and dry, and shall be fit for human habitation.

Section 105. Cleanliness of buildings. Every tenement house and every part thereof shall be kept clean and free from any accumulation of dirt, filth or garbage or other matter in or on the same, or in the yards, courts, passages, areas or alleys connected with or belonging to the same. The owner of every tenement house or part thereof shall thoroughly cleanse all the rooms, passages, stairs, floors, windows, doors, walls, ceilings, privies, water-closets, cesspools, drains, halls, cellars, roofs and all other parts of the said tenement house, or part of the house of which he is the owner, to the satisfaction of the tenement house department,* and shall keep the said parts of the said tenement house in a cleanly condition at all times.

Section 108. Wall paper. No wall paper shall be placed upon a wall or ceiling of any tenement house unless all wall paper shall be first removed therefrom and said wall and ceiling thoroughly cleaned.

Section 109. Receptacles for ashes, garbage and refuse. The owner of every tenement house shall provide for said building proper and suitable conveniences or receptacles for ashes, rubbish, garbage, refuse and other matter.

Section 111. Janitor or housekeeper. Whenever there shall be more than eight families living in any tenement house, in which the owner thereof does not reside, there shall be a janitor, housekeeper or some other responsible person who shall reside in said house and

*("Department of health" in original act. Changed by Greater New York Charter to "tenement house department.")

have charge of the same, if the department charged with the enforcement of this act* shall so require.

Section 112. **Overcrowding.** No room in any tenement house shall be so overcrowded that there shall be afforded less than four hundred cubic feet of air to each adult, and two hundred cubic feet of air to each child under twelve years of age occupying such room.

II. FIRE-ESCAPE LAW OF PENNSYLVANIA.

Act of Assembly, approved July 12, 1897.

Be it enacted by the Senate and House of Representatives of the Commonwealth of Pennsylvania, in general assembly met, and it is hereby enacted by the authority of the same, that all the following described buildings within this commonwealth, to-wit: . . . Every tenement house or other building in which rooms or floors are usually let to lodgers or families, shall be provided with a permanent, safe, external means of escape therefrom, in case of fire, independent of all internal stairways; the number and location of such escapes to be governed by the size of the building and the number of its inmates, and arranged in such a way as to make them readily accessible, safe and adequate for the escape of said inmates. Such escape to consist of outside, open, iron stairways, of not more than 45 degrees slant, with steps not less than 6 inches in width and 24 inches in length. . . And all of said buildings capable of accommodating from one hundred to five hundred or more persons, shall be provided with two such stairways, and more than two such stairways if such be necessary to secure the speedy and safe escape of said inmates, in case the internal stairways are cut off by fire or smoke. And it shall be the duty of the owner or owners in fee, for life, of every such building, and of the trustee or trustees of every estate, . . . to provide or cause or cause to be securely affixed outside of every such building, such permanent, external, un-enclosed fire escape; provided that nothing herein contained shall prohibit any person whose duty it is under this act to erect fire escapes, from selecting and erecting any other and different device design or instrument being a permanent, safe, external means of escape, subject to the inspection and approval of the constituted authorities for that purpose.

*(Tenement House Department.)

Section 2. It shall be the duty of the Board of Fire Commissioners, in conjunction with the Fire Marshal of the district where such commissioners and fire marshal are elected or appointed, to first examine and test such fire-escape or escapes, and after, upon trial, said fire-escape or escapes should prove to be in accordance with Section 1 of this act then the said fire marshal, in connection with the fire commissioners, or a majority of them, shall grant a certificate approving said fire-escape, thereby relieving the party or parties to whom such certificate is issued from the liabilities of fines, damages and imprisonment imposed by this act.

Section 3. That every person, corporation, trustee, etc., neglecting or refusing to comply with the requirements of Section 1 of this act, in erecting said fire-escape or escapes, shall be liable to a fine not exceeding \$300; and also be deemed guilty of a misdemeanor, punishable by imprisonment not less than one month or more than two months. And, in case of fire occurring in any of said buildings in the absence of such fire-escape or escapes, approved by certificate of said officials, the said persons or corporations shall be liable in an action for damages in case of death or personal injuries sustained in consequence of such fire breaking out in said building; and shall also be deemed guilty of a misdemeanor, punishable by imprisonment for not less than six months nor more than twelve months; and such action for damages may be maintained by any person now authorized by law to sue as in other cases of similar injuries; provided, that nothing in this act shall interfere with fire-escapes now in use, approved by the proper authorities.

Fire-escapes—Details of Construction.

Philadelphia.—(In accordance with the Act of Assembly, approved June 3, 1885, and the ordinance of councils, approved December 10, 1896, and supplemental thereto, the following formula will govern the matter of design, construction, and erection of all fire-escapes hereafter required within the City of Philadelphia.)

Platforms.—The platform shall consist of iron balconies not less than four feet in width, the length of the platform to be dependent upon the size of the building and the number of its occupants. The inspector of the district will designate the length of such platform, which shall extend in front of, and not less than nine inches beyond, at least two windows, except in the case of a doorway leading from the floor level of the building to the floor level of the platform, in which case such doorway opening will suffice. Each platform shall be provided with a landing at the head and foot of each stairway of not less than twenty-four inches. The stairway opening of the top

to be no longer than sufficient to provide clear headway. The floors balconies must be of wrought iron, or steel, one and one-half ($1\frac{1}{2}$) inches by five-sixteenths (5-16) inch slats, not more than one and one-fourth ($1\frac{1}{4}$) inches apart, and be securely riveted to frame and brackets. The outside angle frame to be not less than two and one-fourth ($2\frac{1}{4}$) inch angle iron. If flooring is made of wire, same to be not less than Number 6 wire gauge, three-fourths ($\frac{3}{4}$) inch mesh, securely fastened to frame and brackets. All stair openings to be sufficient to provide clear headway. In all cases platforms must be designed, constructed and erected to safely sustain in all their parts a safe load at the ratio of four to one, of not less than eighty pounds per square foot of surface.

Railings.—The outside top railing to extend around the entire length of the platform, and through the wall at each end, and to be properly secured by nuts and washers, or otherwise equally well braced and bolted. The top rail of the balcony must not be less than one (1) inch pipe iron, or material equally as strong. The bottom rail must not be less than three-fourths ($\frac{3}{4}$) inch pipe iron or material equally as strong, leaded into the wall. The standards must be not less than one (1) inch pipe iron, or material equally as strong, and must be securely connected with the top and bottom rail and platform frame. The standards must also be securely braced by means of outside brackets at suitable intervals. Railings in all cases to extend around the stairway openings and be continuous down the stairway. The height of the railing to be not less than three (3) feet.

Stairways.—Stairways must be designed, constructed and erected to safely sustain in all their parts a safe load at a ratio of four to one, of not less than one hundred (100) pounds per step, with the exception of the tread, which must safely sustain, at a ratio of four to one, a load of two hundred (200) pounds per tread. The treads to be not less than six (6) inches wide and the rise not more than ten (10) inches. The stairs in all cases to be not less than twenty-four (24) inches wide, and the strings or horses to be not less than three (3) inch channels of iron or steel, or other shape equally as strong and to rest upon and be fastened to a bracket; said bracket to be fastened through the wall as otherwise provided for brackets. The strings or horses to be also securely fastened to the balcony at the top. The steps in all cases to be double riveted or bolted to the strings or horses.

Brackets.—Brackets must not be less than two and one-fourth ($2\frac{1}{4}$) inch angle iron, or material equally as strong not more than three (3) feet apart, braced by means of not less than one (1) inch square or one and one-fourth ($1\frac{1}{4}$) inch round iron let into the wall at least

four (4) inches, with shoulders on brace, and three (3) inch washer between shoulder and wall, and to extend down the wall four (4) feet from the top of the bracket and out on the bracket angle three (3) feet from the wall. In all cases the bracket angle directly under the balcony must be secured to the wall by means of bolts of suitable size passing through the wall, and four (4) inch washers. There must also be a bar of wrought iron or steel two (2) inches by three-eighths (3/8) inch, let into the wall four (4) inches edgewise, between the brackets, and riveted to the balcony for the floor to rest upon. Whenever the bottom balcony is supported by means of suspension rods (riveted or bolted) to the balcony above, the brackets (of the above balcony) shall be increased in size to meet the increased strain occasioned thereby. The bottom balcony to have a drop ladder of same construction as the stairway, to be hinged and hung with a counter weight. Whenever the drop ladder is upheld by means of a counter balance weight suspended to a chain, such weight shall hang within the platform railing if practicable. In all cases the bolts, rivets and other material used shall be proportioned so as to develop the full strength of the members connected by them. All the parts of such fire-escape must receive not less than two coats of paint,—one coat in the shop and one after erection.

III. OVER-CROWDING.

Washington.—(Regulations concerning the use and occupancy of buildings and grounds, promulgated by the Commissioners of the District of Columbia, April 22, 1897.)

Section 4. No room in any tenement or lodging house shall be occupied as a sleeping room, unless there are at least 400 feet cubic contents for each person therein not less than ten years of age. The Health Officer is hereby authorized, if in his judgment it is necessary to secure compliance with this requirement, to cause to be affixed to or near the door of each such room a placard stating the number of occupants, allowed under this regulation, and shall, in any case, where such placard has been affixed, cause a notice stating such number to be served on the owner, agent or person having charge of the premises. No person having authority to prevent shall permit to occupy any such room as a sleeping room any greater number of persons than are specified on such placard, if any, or otherwise authorized under this section.

IV. CONDEMNATION OF BUILDINGS UNFIT FOR HABITATION.

Boston.—(Chap. 219, Act of 1897, Commonwealth of Massachusetts. An Act for the further protection of the public health in the City of Boston.)

Section 1. Whenever, in the opinion of the Board of Health, any building or part thereof in said city is, because of age, infection with contagious disease, defects in drainage, plumbing or ventilation, or because of the existence of a nuisance on the premises which is likely to cause sickness among its occupants, or among the occupants of other property in said city, or because it makes other buildings in said vicinity unfit for human habitation or dangerous or injurious to health, or because it prevents proper measures from being carried into effect for remedying any nuisance injurious to health, or other sanitary evils in respect of such other buildings, so unfit for human habitation that the evils in or caused by such building cannot be remedied by repairs or in any other way except by the destruction of said building or of any portion of the same; said board of health may order the same or any part thereof to be removed; and if said building is not removed in accordance with said order said board of health shall remove the same at the expense of the city.

V. LODGING HOUSE REGULATIONS.

Public Health Laws of Illinois, relating to lodging houses, boarding houses, taverns, inns and hotels.

Section 16. It shall be unlawful for any landlord, proprietor, keeper, manager or clerk of any lodging house, boarding house, tavern, inn or hotel to permit any room in such lodging house, boarding house, tavern, inn or hotel, to be used or occupied for sleeping purposes which does not contain four hundred (400) cubic feet or more of air space for each person sleeping therein at the same time; and in every room in any lodging house, boarding house, tavern, inn or hotel, containing more than one bed, the beds shall be so arranged as to leave a passage way of not less than two feet horizontally on all sides of each bed; and all beds shall be so arranged that under each of them the air shall circulate freely, and there be adequate ventilation. Any landlord, proprietor, keeper, manager, clerk, employe or other person connected with any lodging house, boarding house, tavern, inn or hotel, violating any of the provisions of this section, shall be guilty of a misdemeanor, and upon conviction shall be punished by a fine not exceeding \$100 nor less than \$25.

Section 18. Within thirty days from the date upon which this act shall take effect, and upon the first day of March of each succeeding year, the landlord, proprietor, keeper or manager of every such lodging house, boarding house, tavern, inn or hotel, shall file with the county clerk of the county in which such lodging house, boarding house, tavern, inn or hotel is located, a written statement, sworn to by him; which statement shall contain the name of the person making the statement; whether the person is the landlord, proprietor, keeper or manager of such lodging house, boarding house, tavern, inn or hotel; the location of such lodging house, boarding house, tavern, inn or hotel according to the city, street and number; the period of time during which such person has been the landlord, proprietor, keeper or manager of such lodging house, boarding house, tavern, inn or hotel; the period of time during which such lodging house, boarding house, tavern, inn or hotel has been continuously operated as such; the number of guests or persons then stopping in said lodging house, boarding house, tavern, inn or hotel; the greatest number of persons who stopped in said boarding house, lodging house, tavern, inn or hotel, upon any day within the thirty days immediately preceding the date of such sworn statement; the smallest number of persons upon any day within said period of thirty days; the total number of rooms contained in such lodging house, boarding house, tavern, inn, or hotel; the number of sleeping rooms contained in such lodging house, boarding house, tavern, inn or hotel; the length and breadth of the building; the number of stories comprised in such building; the number of stories or parts of stories occupied by such lodging house, boarding house, tavern, inn or hotel; the complete dimensions, in feet, respectively, of the smallest and largest sleeping rooms contained therein, and the number of beds contained in said largest sleeping rooms. Such statement shall be made upon blanks furnished to the county clerk by the State Board of Health for that purpose.

VI. CHICAGO TENEMENT REGULATIONS. BUILDING CODE.

Section 641. **Rooms.** No room in any now existing tenement house shall hereafter be constructed, altered, converted or occupied for living purposes unless it contains a window having a superficial area not less than one-twelfth the floor area of the room, which window shall open upon a street or alley or upon a yard or court having a superficial area of not less than twenty-five square feet; or unless such room adjoins another room in the same apartment,

which other room shall have such a window opening upon such a street, alley, yard or court, and between which two adjoining rooms there shall be a sash window having at least fifteen square feet of glazed surface, the upper half of which shall be so made as to open easily.

Section 642. Windows, courts, attic. No room in any now existing tenement house which has no such window, as aforesaid, opening upon a street or alley or upon a yard or court having a superficial area of not less than twenty-five square feet, shall hereafter be constructed, altered, converted or occupied for living purposes, unless it contains a floor area of at least sixty square feet and also at least six hundred cubic feet of air space; nor unless every part of the finished ceiling of such room be at least eight feet distant from every part of the finished floor thereof; provided, that an attic room need be eight feet high in but one-half of its area and such attic room shall not be used for purposes of human habitation other than as a sleeping room.

Section 653. Cellar changed for living purposes. In no now existing or new tenement house shall any room in the cellar be constructed, altered, converted or occupied for living purposes; and no room in the basement of a tenement house shall be constructed, altered, converted or occupied for living purposes, unless all of the following conditions of this ordinance be complied with, and at least one-third of the height of the basement shall be above grade for building; provided, in each case it shall be at least four feet above the street grade.

Section 654. Cellar rooms, height. Such rooms shall be at least 8 feet, 6 inches high in all now existing or new tenement houses in every part, from floor to the ceiling, except, as provided for janitor's use only in section 640 of this ordinance.

Section 665. Water closet. There shall be appurtenant to such room or apartment a water closet conforming to the regulations and ordinances of the city relating to water closets.

VII. FIRE ESCAPE LAW OF WISCONSIN.

Chapter 349, Laws of Wisconsin, 1901.

Providing for fire escapes on buildings. Section 1. Every inn, hotel, boarding house, store-house, tenement house, every building now or hereafter used, in whole or in part, as a public building, pub-

lic or private institution, office or store building, school house, theatre, public hall, place of assemblage, or place of public resort more than two stories high and containing above the ground floor, sleeping apartments, offices, and assembly hall, work rooms or a room intended to be used as a place of amusement, all or any of which rooms are designed for occupancy by twenty-five or more persons shall be provided with one or more fire proof stairways or ladders on the outside thereof, placed in such position and as many in number as may be designated by the chief of the fire department or fire marshal of the village or city in which the building is located, or by the state factory inspector. If more than one stairway or ladder is required, each side of such inn, hotel, boarding house, store-house, tenement building, every building now or hereafter used in whole or in part as a public building, public or private institution, office or store building, school house, theatre, public hall, place of assemblage or place of public resort shall be provided therewith. Such stairways or ladders shall connect the cornice with the top of the first story of any such building by a wrought iron platform, balcony, piazza or other safe and convenient resting place on a level with the floor of each story so connected, and of sufficient length to permit access to the same from not less than two windows of each story; they shall be convenient of access from the interior of the building, commodious in size and form and of sufficient strength to be safe for the purpose of ascent and descent. In cities and villages where there is a water supply for fire purposes, there shall be attached to such stairs or ladders a three-inch wrought iron stand pipe extending from a point within five feet of the ground to a point three feet above the roof or cornice at each story above the first and on the roof there shall be attached a two and one-half inch angle hose valve with male hose connection, and a double or Siamese "Y" female hose connection at the base of the pipe, with threads to conform to the size and pattern used by the fire department where the building is located.

Elevator walls. Section 2. The inside walls or casings of every elevator used for the conveyance of passengers to and from the upper stories of any such building as is within the preceding section, shall be constructed of fire proof material throughout.

Watchman; red light. Section 3. In all such buildings as are described in section 1, which contain one hundred rooms or more, not less than one efficient watchman shall be on duty from 10 o'clock p. m. until 5 o'clock a. m. during each and every night that any such building is occupied. There shall be posted in every room in every building designated in said section, in legible print a brief and accurate statement of all means of safety and escape therefrom in case

of fire, and a red light shall be kept burning all night at the head of each stairway above the first floor, also on each floor above the first, at or near the exit to such fireproof stairway or ladder.

VIII. BUILDING REGULATIONS, CITY OF MILWAUKEE.

Light shafts. Section 66. No space or light shaft of less area than forty square feet for each three-story building, or less than fifty square feet for a four-story building, and so on increasing ten square feet sectional area for each additional story in height, shall be considered as affording means of communication with the outer air, and such open space or light shafts, if covered with a skylight or roof of any kind, shall not be considered as fulfilling the terms of the ordinance.

All skylights of first, second, third, fourth and fifth class buildings, made at the foot of light wells or light courts, shall be made either of prismatic lights set in cast iron frames, or of glass at least five-eighths inches thick set in metallic frames; and if latter are used, they shall be protected by wire netting placed at least six inches above the glass of such skylights, or of wired glass set in metallic frames and metallic sash.

Basement dwellings. Section 77. The height of any basement used for dwelling purposes, or for sleeping apartments to be not less than eight feet, and the height of ceiling of same above grade to be not less than four feet. Such basement to be properly drained and ventilated, and each apartment to have window or windows (leading to outside), with not less than nine square feet of glass for every one hundred square feet of floor area.

Window area. No room in any dwelling, lodging or tenement house hereafter built, nor in any building hereafter altered to be used as such, shall be considered habitable or used as a habitation unless it is at least eight feet in height in the clear, except that in the attic it may average eight feet high. Every such room shall have one or more windows of an area at least 10 per cent. as great as that of the room, opening into the external air or into a room having one or more windows, opening into the external air, with an area of at least 20 per cent. as great as that of said room. The top of at least one window in such room or rooms shall be at least seven feet from the floor, and the upper sash shall be movable.

In all buildings of the first, second, third, fourth and fifth classes, the windows above the second story shall be so constructed as to permit the cleaning of them from the interior, or suitable adjustable

rope or leather strap harness to be attached to staples or screw-eyes securely fastened to window casing; provided, however, the provisions of this section shall not apply to buildings used exclusively for manufacturing purposes, elevators or malt houses.

Lodging and tenement houses. Section 78. In all lodging and tenement houses the dividing wall or partition between the apartments provided for each family shall be made entirely of incombustible material, or of stud partitions filled the full thickness and height with mineral wool, brick or other incombustible material, and plastered on metal lath. In the absence of definite subdivisions between the apartments of different families, eight rooms shall be counted as the equivalent of one apartment.

Fire stop. In lodging or tenement houses there shall be a vertical fire stop, at least four inches thick, of brick, concrete, tile, mineral wool or other incombustible material between the joists filling the space from ceiling to floor, for each twenty-five feet or fractional part thereof measured in the direction of the length of joists.

IX. A PROPOSED ORDINANCE SENT TO THE COMMON COUNCIL OF MILWAUKEE AUGUST 25, 1902.

An Ordinance to regulate the erection of Tenement Houses with due regard to sanitation in their construction.

Section 1. No house hereafter erected shall be used as a tenement or lodging house and no house heretofore erected and not now used for such purposes shall be converted into, used, or leased for a tenement or lodging house unless it conforms to the requirements contained in the following sections.

Section 2. It shall not be lawful hereafter to erect for or convert to the purpose of a tenement or lodging house a building on the front of any lot where there is another building on the rear of the same lot, unless there is a clear open space exclusively belonging thereto and extending upward from the ground of at least ten feet between said buildings if they are one story high above the level of the ground, and if they are two stories high the distance shall be not less than fifteen feet; if they are three stories high the distance between them shall be twenty feet; if they are more than three stories high the distance shall be twenty-five feet. At the rear of any building hereafter erected for or converted to the purpose of a tenement or lodging house on the back part of any lot there shall be a clear open space of ten feet between it and any other building. But when thorough ventilation of such open spaces can be otherwise secured, said

distances may be lessened or modified in special cases by permits from the Board of Health.

Section 3. Every house building or portion thereof in the City of Milwaukee designed to be used, occupied, leased or rented, or which is used, occupied, leased or rented for a tenement or lodging house shall have in every room which does not communicate directly with the external air a ventilating or transom window having an opening or area of three square feet over the door leading into and connected with the adjoining room if such adjoining room communicates with the external air and also a ventilating or transom window of the same opening or area communicating with the entry or hall of the house, or where this is from the relative situation of the rooms impracticable such last mentioned ventilating or transom window shall communicate with the adjoining room that itself communicates with the entry or hall. Every such house or building shall have in the roof at the top of the hall an adequate and proper ventilator of a form approved by the Commissioner of Health.

Section 4. In every such house hereafter erected or converted, every habitable room, except rooms in the attics, shall be in every part not less than eight feet in height from the floor to the ceiling, and every habitable room in the attic of any such building shall be not less than eight feet in height from the floor to the ceiling throughout not less than one-half the area of such room. Every such room shall have at least one window connecting with the external air, or over the door a ventilator of perfect construction connecting it with a room or hall which has a connection with the external air, and so arranged as to produce a cross current of air. The total area of window or windows in every room communicating with the external air shall be at least one-tenth of the superficial area of every such room; and the top of one at least of such windows shall not be less than seven feet and six inches above the floor, and the upper half at least shall be made so as to open the full width. Every habitable room of a less area than one hundred superficial feet, if it does not communicate directly with the external air, and is without an open fire-place shall be provided with special means of ventilation by a separate air shaft extending to the roof or otherwise as the Commissioner of Health may prescribe.

Section 5. Every such house hereafter erected or converted shall have adequate chimneys running through every floor with an open fire-place or grate or place for stove properly connected with one of the chimneys, for every family and set of apartments; it shall have proper conveniences and receptacles for ashes and rubbish; it shall have water furnished at one or more places in such house or in the yard thereof, so that the same may be adequate and reasonably convenient for the use of the occupants; it shall have the floor of the cel-

lar properly cemented so as to be water tight; the halls of each floor shall open directly to the external air, with suitable windows, and shall have no room or other obstruction at the end unless sufficient light and ventilation is otherwise provided for said hall in a manner approved by the Commissioner of Buildings.

Section 6. No owner, agent, lessee, or keeper of any tenement house or lodging house or boarding house shall cause or allow same to be over-crowded or cause or allow so great a number of persons to dwell, be or sleep in any such house or any such portion thereof as thereby to cause any danger or detriment to health. No room in any tenement or lodging house shall be so crowded that there shall be less than 400 cubic feet of air to each adult and 200 cubic feet of air to each child under twelve years of age occupying the said room.

Section 7. Every person who shall be the owner, lessee, keeper, manager or agent of any tenement house, lodging house, boarding house, store or manufactory shall provide or cause to be provided for the accommodation thereof and for the use of tenants, lodgers, boarders and workers therein adequate privies or water-closets, and same shall be so adequately ventilated and shall at all times be kept in such a cleanly and wholesome condition as not to be offensive or dangerous or detrimental to health. And no offensive smell or gases from or through any outlet or sewer or from any such privy or water-closet shall be allowed by any person aforesaid to pass into any such house or part thereof or into any other house or building.

Section 8. No person having the right or power to prevent the same shall knowingly cause or permit any person to sleep or remain in the cellar or in any place dangerous or prejudicial to health by reason of the want of ventilation or drainage or by reason of the presence of any poisonous, noxious, or offensive substance or otherwise.

Section 9. Every tenement or lodging house shall have the proper or suitable conveniences or receptacles for receiving garbage and other refuse matter. No tenement or lodging house nor any portion thereof shall be used as a place for any combustible article or any article dangerous or detrimental to health; nor shall any horse, cow, calf, swine, poultry, sheep or goat be kept in said house.

Section 10. Every tenement or lodging house and every part thereof shall be kept clean and free from any accumulation of dirt, filth, garbage or any other matter in or on the same or in the yard or court, area, passage or in the alley connected with or belonging to the same. The owner, manager or agent of any tenement house or any part thereof shall thoroughly cleanse all rooms, passages, stairs, floors, windows, doors, walls, ceilings, privies, cess-pools and drains thereof of the house or any part of the house of which he is the owner or lessee or agent, to the satisfaction of the Commissioner of Health so

often as shall be required by or in accordance with any regulation or order of said commissioner, and shall well and sufficiently to the satisfaction of said commissioner, whitewash the walls and ceilings thereof twice at least in every year, and in the months of April and October, unless said commissioner shall direct otherwise.

Section 11. The owner or keeper of any lodging house, and the owner or agent of the owner, and the lessee of any tenement house or part thereof shall whenever any person in such house is sick of fever or of any infectious, pestilential or contagious disease, and such sickness is known to such owner, keeper, agent or lessee, give immediate notice thereof to the Commissioner of Health, and thereupon said officer shall cause the same to be inspected, and take such action as in his judgment he deems necessary for the protection of health.

Section 12. A tenement house within the meaning of this article shall be taken to mean and include every house, building or portion thereof which is rented, leased or hired out to be occupied as the residence or home of more than three families, living independently of one another and doing their own cooking, but having a common right in the halls, stairways, yards, water-closets or privies or some of them.

Section 13. A lodging house shall be taken to include any house or building or portion thereof in which persons are harbored, received or lodged for hire for a single night or less than a week at one time, or any part of which is let for a person to sleep in for any term less than a week.

Section 14. A cellar shall be taken to mean and include every basement or lower story of any building or house of which one-half or more of height from the floor to the ceiling is below the level of the floor adjoining.

Section 15. Any person or persons violating, disobeying, neglecting, or refusing to comply with or resisting any of the provisions of this article or who refuse to comply with any sanitary regulations of the department of health concerning any of the matters or things mentioned in this article shall, upon conviction, be subject to a penalty of not less than \$10.00 and not exceeding \$200.00 or imprisonment in the house of correction not less than fifteen nor more than sixty days.

Section 16. All ordinances or parts of ordinances containing the terms of this ordinance are hereby repealed.

Section 17. This ordinance shall take effect and be in force from and after its passage and publication.

Read a first and second time and referred to the committees on public buildings, and grounds and judiciary.



MISSISSIPPI RIVER SCENE
Showing the village of Genoa, in Vernon County

PART V.

WISCONSIN'S RESOURCES, INDUSTRIES
AND OPPORTUNITIES.



PREFACE.

In the preparation of this bulletin, undertaken to call the public attention to that vast empire of wealth in central and northern Wisconsin still untouched and unutilized and to assist the many cities, towns and villages of the state in their desire to induce capital to locate in their neighborhood to develop their opportunities in order that their taxable property and industrial output might be increased and their population enlarged, the Bureau of Labor has been guided solely by the desire to present the facts concerning each locality, whether favorable or unfavorable, in their true light. Wherever possible, official and expert authority has been consulted, and in those instances where it was necessary to resort to local opinion, especial effort was taken to secure expressions which were free from that pardonable prejudice of civic pride or public patriotism.

The material consulted has been both extensive and varied. The statistics of agriculture were obtained from the Tenth, Eleventh and Twelfth United States Census, the Wisconsin State Census for 1905 and the various publications of the United States Department of Agriculture. In the description of the individual counties resort was again had to the publication of the United States Census Bureau, the State Census, Chamberlain's Geology of Wisconsin, the Handbook of Northern Wisconsin and the bulletins of the Wisconsin Geological Survey. The range of prices for the different kinds of land in each county were obtained by correspondence with the registers of deeds and are based upon the actual prices paid for land as shown by the public records of transfer. That part dealing with the geology of the state was prepared from the reports of the national and state Geological Surveys and supplemented by the results of personal observa-

tions while engaged in the work of geological surveys. The chapter dealing with the cities, towns and villages was prepared from printed schedules which had been sent to officers of business men's associations, postmasters, bankers and professional men of each of the localities, while in not a few instances personal examinations were made. The material dealing with the mines and quarries of the state was obtained from the Twelfth United States Census and the publications of the State Geological Survey together with statements from railway traffic officials regarding developments along their lines. In the preparation of the chapter on Water Powers of Wisconsin, liberal use was made of the Tenth United States Census, Chamberlain's Geology of Wisconsin and especially the Bulletin on Water Powers of Northern Wisconsin prepared by Prof. L. S. Smith for the United States Geological Survey, to which latter department this Bureau is especially indebted for the many valuable tables presented on this subject. Acknowledgement is also due to the C. & N. W. and W. C. railroads for statistics giving the number of tons of iron, lead and zinc shipped out of the state and for many of the cuts used in this report; also to Prof. G. E. Culver for that part of this report dealing with the geological history of the state.

A considerable interest has been manifested by the public in the material herewith presented and comments as to its probable value have been freely made by the press. It is the earnest hope of the Bureau of Labor that the results of its work will equal the expectation of the public and that the free distribution of this bulletin will attract attention to our undeveloped resources so that capital may seek investment, labor find profitable employment and population be increased to the great enrichment of the commonwealth.

WISCONSIN'S RESOURCES, INDUSTRIES AND OPPORTUNITIES.

CHAPTER I.

FORMATION OF SOILS.

The soils of Wisconsin, with some notable exceptions, are derived from the decay of the underlying rocks. This rock decay is a slow and continuous process, hence the soils at the present time, as at all times, are being added to from below by the decay of the subjacent rocks.

The agents producing decay are frost, moisture, change of temperature, vegetation and various forms of chemical action set up in the rocks by the material carried into them by the water which saturates them. As these agencies are ever present and ever active it is evident that the results of their activity must be continuously if slowly added to the soil.

VARIETY OF SOIL.

As about every variety of rock is found within our state, all possible varieties of soil must be in process of formation at the present time; but as these rocks are variously distributed throughout the state it becomes important to know not only the varieties but also the distribution of these rocks and the resulting soils.

For our purpose the rocks with which we have to deal may be classed as sandstones, limestones, granites, gneisses, schists and various kinds of igneous rocks. As the first four mentioned cover nine-tenths of the state and as granite and gneiss are of the same composition, we may limit our discussion to a consideration of sandstone, limestone and granite.

Sandstone. Manifestly the decay of sandstone must furnish mainly sand, hence the soil of a region underlaid by sandstone will be mainly a sandy soil. Sand grains (quartz) do not decay and pure sand is about the poorest soil possible. Sandstone always contains some cementing material, carbonate of lime, iron oxide or silica. These substances are therefore added to the soil when the rock decays.

Most sandstone contains also grains of feldspar, flakes of mica and fragments of other minerals the decay of which somewhat improves the quality of the soil.

By reference to the geological map of Wisconsin it will be seen that sandstone occurs as a surface rock in a broad, somewhat crescent shaped belt crossing the state from east to west. The counties in which it forms the major part of the surface rock are: Burnett, Barron, Dunn, Pepin, Eau Claire, Trempealeau, Jackson, Monroe, Adams, Juneau, Sauk, Marquette, Waushara, southern Wood, Portage, Waupaca and Shawano. The soil of these seventeen counties therefore may be expected to be sandy. As a matter of fact a considerable portion of it is either sand or sandy loam. The area of such soil has however been considerably reduced by glacial action and other agencies as will be noted in the present article. Considerable areas within these counties have had their soil modified by the accumulation of vegetable matter in swamps, marshes and along the courses of streams.

The transfer of clay by wash from the granite area to the north has still further modified portions of the soil of this sandstone belt.

As a result of these modifications all of which tend to improve the quality of the soil, the region is a fairly fertile one, yet it is, for general agricultural purposes, considered the poorest land in the state.

This statement loses its force very largely however when three facts are considered. The first of these facts is that within the area under consideration are found the large cranberry swamps of the state. The value of these swamps per acre is much higher than that of the best agricultural land.

Second, this sandstone belt is the natural home of the white pine.

Vast fortunes have been taken from this district as the proceeds of the lumber derived from this pine; but with true

American disregard for the future, no effort whatever has as yet been made to replant any portion of the deforested area. The time will surely come when conservative investors will put capital into the reproduction of the most valuable crop this land ever produced.

The third fact is that with proper culture the sandy loam of this district produces large crops of potatoes of superior quality. The region is sometimes spoken of as the "potato belt." The potatoes command the highest price in all markets and the acreage planted is constantly increasing.

Limestone. When limestone disintegrates and the resulting particles are disseminated through other material it forms a marly soil. This is however only a temporary stage. The particles of limestone (carbonate of lime) gradually dissolve in the rainwater that falls upon them and is thus carried in solution to the streams and so out of the district in which the rocks lie. It follows that if limestone were pure carbonate of lime there would be little or no accumulation of soil from this source in regions underlaid by this rock. As a matter of fact no limestone is pure. The impurities consist chiefly of clay and iron oxide. The clay sometimes constitutes as much as twenty-five per cent of the rock but is usually much less than that. The iron oxide is always in small quantities but because of its high color is often quite noticeable.

As these impurities are insoluble under ordinary conditions, while the carbonate which constitutes the great mass of the rock is soluble, the clay and iron oxide are left behind and so from the decay of limestone, not a marly but a clayey soil is derived. It is a soil made almost solely from the impurities of the parent rock.

The portion of our state underlaid by this rock includes practically all of the state lying south and east of the sandstone belt already described. Some exceptions are to be noted in the south central and south western portions of the state where some sandy areas are found intermingled with areas of clayey soil. This part of the state was the first to be developed and is at present the richest agricultural portion of the state. These facts are probably largely due to the character of the soil of this portion.

As will be noted farther on in this article, the clays of this district now extend some distance outside the area where they were formed.

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Granite and Gneiss. These rocks, sometimes called primary rocks since the limestones and sandstones are derived from them and hence are of secondary origin, occupy the portion of the state lying north of the sandstone belt, with the exception of the northwest corner, where we have a thick series of interbedded igneous and sedimentary rocks.

The composition of granite is more complex than that of the secondary rocks previously considered and the resulting products of decomposition are correspondingly more varied. The constituents of granite (and gneiss) may be considered as consisting mainly of quartz, feldspar and mica with often much hornblende. These are the essential minerals. Others are usually present as accessory minerals but mostly in small amounts.

Of these the quartz does not decay, but as the other minerals do, the quartz grains fall out and in process of time become rounded into sand grains or gravel.

This gives rise to sandstone, or to loose beds of sand and usually to sandy soil. The sandstone belt already described will thus be seen to be in its natural position surrounding the granite area which produced it. Each sand grain in the sandstone was once a constituent crystal of granite or gneiss to the northward.

The feldspar is perhaps the most important substance in the granite. It is a complex mineral and in its decay gives rise to a number of simpler compounds one of which is kaolin, the basis of clay.

Briefly stated clay is the chief product resulting from the decay of feldspar. The other products are lime, soda, potash, and oxide of iron. The combined amounts of these latter substances do not in the case of any given mass of feldspar amount to more than one twentieth of the whole, the other nineteen twentieths being clay.

In the distribution of these substances by running water the soda, potash, lime and to some extent the iron oxide are taken into solution and thereafter go where the water goes while the insoluble clay with the remainder of the iron oxide are taken into suspension and carried greater or less distances before being deposited. The sand grains from the quartz crystals are at the same time rolled along and worn somewhat and finally dropped as a bed of sand. If the separation is

complete as it rarely is, beds of pure clay and of clean sand result. These pure beds are usually, however, the result of continuous or repeated washings and are quite infrequent. Usually the clay and sand are mixed in various proportions forming loam which will be either a clay loam or a sandy loam according to the relative amounts of the two. If the region is relatively high with steep slopes much of the clay will be carried away and a light sandy loam will be left while at some more distant place the clay will be deposited and a clayey soil or heavy loam will result. On the other hand if the region be relatively low with gentle slopes but little clay will be carried out of the district in which it is formed and a medium loam will be formed lighter or heavier according to the composition of the rock. If the granite that is decaying be notably feldspathic the clay will predominate over the sand, that is a clayey loam will be the soil formed. If the granite or gneiss be rather quartzose in character the sand will be in larger proportion than in the case just noticed and the loam will be of the light or sandy variety. The soil is thus seen to vary with two sets of conditions, the composition of the rock and the topography of the region in which the rocks are. For the most part the granite area of northern Wisconsin is relatively level, large areas having only very gentle slopes. Here the soil is quite uniformly a heavy loam.

Locally the slopes are steeper and the residual soil is a light sandy loam. Exact data for an accurate statement as to the relative areas of sandy loam and of clayey loam are yet wanting.

From the preceding brief discussion it will be seen that in so far as the origin of the soils of the state are concerned, we have three well-marked districts. The eastern and southern districts of heavy clayey loam, the central district of sandy soils and sandy loams, and the northern district of mixed sandy and clayey loams. Scattered through the eastern half of the state are many swamps some of them of considerable area. The total area of these swamps is so large as to make them an important element in considerations of soil distribution.

The distribution of these soils is not quite so simple as their origin, that is the three districts of origin have not retained completely the soils that originated in them. In each district there have been both additions and subtractions of soil

material. In this distribution various agencies have had part. These agencies have transported one kind of soil and have mixed it with other kinds, or they have taken up a mixture of several varieties and have carried them into a region having previously a single variety of soil. This gives to the soils of the state a somewhat mixed character. One result of this mixture is seen in the great variety of vegetation that may be seen growing on any small area. This fact is strikingly brought out by comparing equal areas of Wisconsin with any of the plains states, e. g. South Dakota. In the latter state if one schedules carefully the native plants found on a plot of prairie a few rods in extent, he finds that practically every other equal area for miles contains almost precisely the same plants. This is of course due to the uniformity of the soil over long distances in these prairie regions. A similar test in Wisconsin brings out the fact that the vegetation varies continuously and that the number of species is very much greater. This again is due to the great variety and to the mixing of the soils already referred to. It seems a fair inference that the soil of Wisconsin will produce a greater variety of cultivated crops.

THE MOVEMENT OF THE SOIL.

We may look upon the underlying rocks in process of decay as soil factories. The output of these factories in part accumulate about the shop as lumber does about a sawmill; but just as the lumber in the latter case is steadily carried away to other points either in rafts on the streams or on trains on the various lines of railway or by teams over the common roads, so the soil product is transported by various means to regions more or less remote from the place of origin.

These transporting agencies are mainly three, viz. winds, running water and moving ice. To these may perhaps be added the creeping due to gravity since on all slopes the soil is constantly slipping down hill.

Of these agencies the wind is of least importance, yet when its work is looked upon in the aggregate it is seen to be no mean factor in the problem. The wind exercises selection in its work of transportation. It transports only the finest material. It is further conditioned by the dryness of the soil-

stuff. From this it will be seen that the amount of soil transport, by wind, will vary directly as the aridity of the region and as the fineness of the soil material. The fact that in dry regions the winds are more continuous and stronger than elsewhere adds a large factor of power to soil movement by wind in such regions.

Wisconsin does not possess an arid climate hence soil movement by this means is reduced to a minimum. Nevertheless at certain seasons the total transport by wind is considerable.

A fact to be noted in this connection is that while the wind picks up and carries only the fine particles it drops them upon fine and coarse alike and so in the depositing regions, tends to mix the different sorts rather than to sort and separate as it does where it picks up its material. In regions in which the wind-transported material is large in amount, both the collecting and the depositing may be separatory in their character. The well known loess deposits of the Missouri valley and to a less extent of the lower Mississippi¹ valley are examples.

In such cases the constant removal of the fine material from the region where the wind gets its load results in increasing coarseness of the residuum. On the other hand the region in which the load is deposited has the total fineness of its soil increased. This last fact may be seen to good advantage in the deposits of the Missouri valley where the loess is often two hundred feet thick. Similar deposits on a much larger scale occur on the Yang tse kiang in China.

Running water. Water that falls on the surface either sinks into the soil, evaporates, or runs off into the streams. Evaporation may be neglected here. The part that sinks into the ground at once begins to dissolve the various minerals of which the soil is composed and the dissolved material thereafter goes where the water goes so long as it remains in solution. If conditions arise which render the water incapable of holding a given substance in solution that substance will at once be deposited. As this ground water is constantly present and constantly moving up and down as well as laterally, so this soluble material is shifting its location. At times it ascends and

¹ The loess of the Mississippi valley is believed by Chamberlain to be only in part due to wind action.

is deposited near the surface as the result of evaporation. After heavy rains the motion is downward near the surface. All this movement of soil matter in solution tends to complexity of soils wherever deposition occurs and to simplification where solution takes place. In the one case it is a process of subtraction, in the other, of addition.

The water that runs over the surface takes up the soil particles mechanically and carries them in suspension so long as the right conditions exist. The swifter the flow the greater the load the stream can carry and the coarser the particles it is able to transport. Running water is therefore a sorting agency. Its sorting power is active both in the getting of its load and in the deposition of it. As a stream's velocity is checked it lays down first only its coarser material. A further loss of velocity causes a dropping of finer material. A stream thus deposits gravel in one place, sand in another and clay in another.

As running streams are very numerous in Wisconsin it is apparent that a large quantity of soil has been transported by them. This soil-movement has been in part from one portion of a given soil-making district to another part of the same district. As for example the streams of the eastern part of the state carry the clays of that district east or southeast and either deposit them in other parts of the same clay producing area or carry them into Lake Michigan.

In other cases one type of soil is carried from its place of formation and deposited in a region that is producing another kind of soil.

Thus clay from the granite area of northern Wisconsin is carried south and mixed with the sandy soil of central Wisconsin. Owing to the special conditions of this transfer the sorting power of water is to quite an extent nullified at the depositing end in this case. The fine clay and silt from the northern area being carried into the sands more than is usually the case where such material is laid down by streams.

Therefore, while it is true that in general the action of running water results in sorting the soil matter and separating the coarse from the fine, there are cases in which, at the places where the water lays down its load a mixing of material occurs.

Moving ice. There remains for consideration the third and last of the agencies that have had to do with the distribution

and commingling of the soils of our state. This agency differs from the others in several important particulars. First as to the matter of time. The wind blows fitfully, now feeble and now strong; but feeble or strong, it blows constantly year in and year out, and may be presumed to have done so throughout all time. Practically the same may be said of running water. Most of the work of the streams is done during the comparatively few weeks of high water in the spring of each year when the soil is loose and easily taken up by the water. Yet some work is done every hour in the year, hence we may say that running water is an agent that works continuously.

Moving ice such as we have to consider is in sharp contrast in this respect. It works at infrequent and widely separated intervals. So widely separated indeed that for our purpose we may fairly consider it as having had but a single period of activity. That period was of long duration however and was concluded several thousand years ago.

Another difference is found in the area covered by the activities of these agents. While wind and running water may be considered as reaching practically every square foot of the state with greater or less effectiveness, moving ice, the great ice-sheet of the Glacial Epoch, covered only a little more than three-fourths of the state in its greatest advance and only about two-thirds of the state during the Wisconsin stage.

Ice work differs from stream work in still other particulars. A stream works along a relatively narrow line, shifting its course slowly but continuously so that, given time enough, it may occupy at some time every portion of its valley. Ice on the other hand covers its whole territory all the time.

Again a stream sorts its material and deposits it in a stratified condition. An ice-sheet mixes all its material and grinds it into a somewhat homogeneous mass and deposits it in a wholly unstratified condition. Huge boulders, gravel, sand and clay are heaped up together in discordant mounds and ridges or spread out in sheets without regard to origin or size of the material; and with equal disregard of the topography of the region where the deposit is made. Thus it is a common thing for the ice to pile up its material on the tops of hills as well as upon slopes and across valleys. Manifestly it is impossible for water to do this, although wind deposits are made with some independence of topography.

One other difference at least must be considered if we are to gain anything like an adequate conception of the effects of the ice-sheet in the distribution of soils. Ordinary streams such as those of Wisconsin can transport only relatively fine sediment. With increased velocity the size of the particles that may be carried increases at a very rapid rate, but none of the streams of Wisconsin are competent to the transportation of anything larger than coarse gravel. Most of them carry only the finer sediments, sand and clay.

The ice sheet on the other hand was able not only to carry all loose material that came within its reach regardless of size, but could and did transport immense loads, hills of mixed material all along its course.

CONDITIONS PRIOR TO THE ADVANCE OF THE ICE-SHEET.

Wisconsin is geologically a portion of one of the oldest parts of the earth. Its rocks have therefore had time to undergo profound decomposition. During part of this long period its elevation has probably been greater than at present and its relief stronger. As a result much of the material of the decayed rocks was swept into the sea.

It seems probable however that for a relatively long period the elevation of this region has been practically what it is at present. This moderate elevation together with its relatively level surface allowed a considerable accumulation of soil material within the borders of the state notwithstanding the fact that every stream was constantly carrying such material out of the state as at present. This material was slowly worked over, sorted and redeposited by the streams to be again worked over and redeposited a little farther down. This process was continuous during a very long period. The result was that at the time of the advance of the ice there was a moderately thick blanket of this soil-stuff mantling the whole state, but thicker in some portions than in others for the reasons given. The conditions may be fairly well understood by an examination of the southwestern part of the state, the part never covered by the ice and therefore a region in which the decay of the rocks, the work of the streams and the accumulation of soil-stuff has not been interrupted. The complete sway of the streams is at once recognized. A complete system of drainage is in operation. There is an entire absence of lakes and an almost entire absence of swamps. The soils are more largely local in

origin. The material has been sorted by water and the finer material carried to lower levels and in part out of the state. The topography also is in marked contrast with that of the eastern and northern portions of the state. Sharp ridges separate the valleys while symmetrical mounds and hills abound. The region has a much stronger and sharper relief than is found elsewhere in the state.

With some differences due mainly to the different types of rock in the different sections of the state the whole state presented essentially the same appearance at a time just prior to the advent of the ice-sheet.*

The direction of the advance of the ice in Wisconsin was mainly from north-east to south-west. In the east central portion of the state the movement was more westerly than southerly while in the north-west corner of the state, in Douglas and Burnett counties the movement was to the south-west.

In its movement over the country the ice-sheet (several hundred feet in thickness) carried the material which it transported partly in front of it and partly beneath. As it pushed forward it plowed up the loose blanket of soil already spoken of and carried a portion of it forward as a high irregular ridge along the ice front. At the same time it overrode the rest of the soil. This overridden portion, however, was in large part dragged along under the ice. Some of it moved nearly as fast as the ice, some more slowly and some perhaps not at all.

This differential movement of the soil blanket necessarily resulted in much mixing of the different materials, besides which there was added to the older accumulations, fresh portions ground off from the rocks over which the ice was passing. The whole mass, new and old was ground together and transported bodily to the southward and westward.

On the final retreat of the ice, that portion of the material that had been carried in front of the ice was left as a high irregular ridge, the terminal moraine, marking the halting place of the ice. The portion dragged along under the ice was left as a thicker or thinner blanket of till over the entire portion of the state covered by the ice.

This soil blanket differs in some important particulars from

* This article does not concern itself with the cause or duration of the ice-age but takes cognisance only of the effects of the movement of the ice and its effects on the character and distribution of the soil.

that due to water transport. Among these may be mentioned the lack of sorting, or a complete mixing and kneading together of the most diverse soil material. The unevenness of the deposit is another characteristic. The deposit varies greatly in thickness, being generally thicker in valleys and thinner on hills. To this statement there are some notable exceptions. The material pushed in front of the ice was quite as likely to be left on hills as in valleys, so that some of the thickest deposits of glacial drift are upon the higher grounds. In a measure the same thing was true of the material carried along under the ice. It sometimes filled valleys and sometimes was swept almost entirely out of them. In some places notably in the counties of Dane and Jefferson this sub-glacial material was deposited in the form of oval rounded hills. (Drumlins.) In general the region over which the ice passed is marked by a smooth sweeping topography in marked contrast with the sharper relief of the non-glacial portion.

Projecting knobs and hills were cut down, sharp ridges rounded, valleys filled and the entire pre-glacial drainage system obliterated.

The irregular surface left by the ice on its retreat allowed the accumulation of water in the countless lakes and swamps which to-day characterize the region once ice-covered. A new system of drainage is slowly establishing itself and the heterogeneous deposits made by the ice are slowly being worked over by the water and will in time all be carried to lower levels and made into stratified deposits.

The general result of the ice invasion, so far as the soil is concerned, then appears to be that over about three fourths of the state there was a bodily transfer of soil accompanied by a very thorough mixing and kneading of the same and also considerable additions of fresh material ground off from the more exposed portions of the rocky surface over which the ice moved.

This does not mean that the soil is uniform in character over the region mentioned. The grinding and mixing were indeed thorough, but where the ice found a large area of clay for example it usually incorporated into it some of the material brought from farther north, and carried from it some of the clay to be mixed with whatever lay in its course farther south. In other words the uniformity produced was relative, not absolute.

Mention has been made in this article of the swamps in some parts of the state. It is perhaps worth while to call attention to the very excellent farming land that results from the filling up and draining of these swamps. Most of them were formerly lakes. By the washing in of silt from the higher ground and the accumulation of vegetable matter (and in some cases marl also) the lakes are gradually changed to swamps or marshes and then to firm meadows and finally to good cultivable land.

The soil of such old lake beds is usually deep and exceptionally fertile unless the vegetable accumulation is in the form of peat. A peat swamp does not constitute a good foundation for farming land. If there is not mixed with the peat considerable silt or vegetable matter more decayed than the peat, the resulting soil will not be a very satisfactory one to the farmer under present modes of treatment of such soils.

In other words the soil resulting from the filling up of swamps may be said to vary inversely in value with the quality of the peat. The poorer the peat the better the soil. The best soils result in those cases in which there is no peat. The great durability and lasting fertility of these soils make them very desirable lands.

Somewhat related to these lands in general character are certain valley lands or river plains lying along the courses of streams.

These are built-up lands composed of the silt of the streams and more or less vegetable matter depending on the character of the country through which the stream flows. Such lands are least valuable along the course of streams carrying sand in considerable amount. The soil in such cases is often rich when first cultivated but does not usually retain its fertility long. The presence of so much sand makes the soil very porous and the vegetable matter oxydizes rapidly with a corresponding deterioration in the quality of the soil. If on the other hand the stream carries only fine silt the valley deposit will be of much the same quality as the swamp deposit previously mentioned and the land will possess high and lasting fertility.

In this connection a common feature of some practical importance may be noted. The character of the deposit made by a stream is often found to be entirely different on opposite sides of the stream. The distinction is often sharp and clearly

defined Clayey deposits may characterize one bank of the stream and sandy deposits the other. Sometimes glacial drift or boulder clay occupies one side and sandy deposits the other. The point is that the soil conditions found by an examination of one side of a stream are frequently very unlike those existing on the other side of the same stream. The foregoing remarks apply mainly if not entirely to those portions of streams along which deposition by the stream has taken place, that is to the parts of the stream in which the flow either is or has been sluggish.

CLIMATE.

Owing to the proximity of the great lakes, the climate of Wisconsin is more temperate than that of other states of the same latitude west of the Mississippi. The mean temperature for Jan. is about 12.8° F. above zero at Bayfield, 15.5° above zero at La Crosse and 19.3° above zero at Milwaukee. For July the mean temperature is 67° at Bayfield, 73° at La Crosse, and 69° at Milwaukee. This indicates that the climate along the lake shore is cooler in summer and warmer in winter than at interior points of the same latitude. The maximum temperature for the state ranges between 90° and 95° seldom exceeding 100° while the minimum temperature ranges between 10° above and 25° below zero and at very rare intervals exceeds 40° below zero in the coldest parts of the state.

Rainfall. The average annual rainfall is 31 inches and is quite evenly distributed over the state, being slightly greater along the shores of Lake Michigan than in those sections of the state farther west. The precipitation is greater between July and October than at any other season of the year. Thunderstorms are frequent in summer, but in winter the air is dry and clear; the snow-fall in the northern part of the state is generally heavy while in the southern part it is comparatively light.

CHAPTER II.

INDUSTRIES OF WISCONSIN.

AGRICULTURE.

Location, Area, etc. The state lies between $42^{\circ} 30'$ and $47^{\circ} 3'$ north latitude and $86^{\circ} 49'$ and $92^{\circ} 54'$ west longitude, and has an area of about 56,040 square miles, of which about 1,590 square miles are covered with water. Of the total area over 66 per cent or about 37,000 square miles are yet unimproved. This means that the State of Wisconsin can as conveniently furnish homes for 1,388,000 families or 6,686,000 people as it is now furnishing homes for 462,814 families or 2,228,949 people, and the wealth of the State could thereby be increased three fold. More than this, when the farmers of the state recognize as they do in the East and in Europe, and as they are beginning to do in Wisconsin, that more wealth can be produced by *intensive* rather than *extensive* farming; when capital recognizes that in no other state is there so promising a field for the development of water powers for manufacturing, transportation, and lighting purposes; when our excellent facilities for water and railroad transportation of raw materials and finished products are considered; they will appreciate the fact that the number of inhabitants Wisconsin will support and the industrial possibilities the state affords can hardly be over estimated.

No state in the Union possesses a more fertile soil, and with equal cultivation and fertilization, no state is more productive, according to the reports of the United States Department of Agriculture. The state of Maine produces more wheat, corn, oats, buckwheat and potatoes per acre than Wisconsin or any

of the surrounding states. New Hampshire, Vermont, or Massachusetts produces more tobacco per acre than Wisconsin. Yet when it is considered that Maine has but about one-eighth of an acre of corn in every forty acres in farms to Wisconsin's three acres for every forty acres in farms; that for every forty acres in farms in Maine, there is only one-fourth acre of wheat while Wisconsin has three-fourths; that for every forty acres in farms in Vermont there is less than one one-hundredth of an acre of tobacco while Wisconsin has one-twelfth of an acre, the conclusion can easily be drawn that the greater productiveness of Maine and Vermont for these crops is largely due to fertilization and cultivation.

In order to arrive at some conclusion as to the relative standing of Wisconsin as an agricultural state, the following table has been prepared and those states which are, in the main, subjected to similar climatic conditions and similar methods of farming have been selected for comparison.

The following table gives the average number of bushels of grain and amount of hay and tobacco produced per acre, based upon the amount produced for the years 1896-1905 inclusive, for all the states located in the upper Mississippi Valley, together with the average amount produced per acre in the United States for the same period.

State.	Potatoes.	Corn.	Wheat.	Oats.	Barley.	Rye.	Buckwheat	**Flax.	Hay, tons.	STobacco, lbs.
Michigan	82.1	35.5	13.8	32.7	24.5	15.5	14.6	.....	1.33	709
Ohio	74.6	34.7	13.8	31.8	26.7	16.1	16.9	.....	1.36	8-6
Indiana	72.7	33.9	12.2	31	24.6	13.9	16.7	.....	1.38	615
Illinois.....	80.1	34.5	12.2	32.5	26.9	16.6	14.7	.....	1.36	635
Missouri.....	75	27.5	12.7	22.5	19.8	13.9	15	7.8	1.53	670
Iowa.....	80.8	32.4	14.2	31	25.6	17.6	15.3	11.4	1.58	.....
Kansas.....	73.7	22	13.7	23.9	19.6	13.4	*12.7	8.	1.45	.....
Nebraska.....	83.1	28	15.4	27.9	24.1	16.6	15.4	10.2	1.61	.....
S. Dakota.....	81.3	25.8	11.1	30.4	25	15.9	.....	11.2	1.34	.....
N. Dakota.....	94.3	22.6	12.1	26.1	33.5	14.9	†11.1	11.6	1.48	.....
Minnesota.....	86.6	29.1	13.3	33.3	26.4	18.7	14.7	11.3	1.67	.....
Wisconsin.....	92.3	33.2	15.7	34.9	28.9	16.1	15.3	13.	1.53	1,349
Average for United States	75.4	25.2	13.5	29.6	25.1	15.4	18.1	11.2	1.47	797

* Average for years 1901-1905 inclusive.

† Averages for the years 1901-1904 inclusive.

§ Average for the years 1900-1904 inclusive.

** For the year 1905 only. No figures for other years obtainable.

In this table a comparison of the total amount of products produced in each state has not been attempted, because a knowledge of the productivity of the soil could not thus be

obtained. The fact that one state with an area of one-hundred thousand square miles produces one and one-half times as much corn as a state having an area of fifty thousand square miles does not indicate by any means that the soil of the larger state is any more productive than the soil of the smaller or vice versa. But in order to ascertain the relative productivity of the soil for various crops, the average amount produced per acre must be known. Even this knowledge will not be absolute because the amount any soil will yield depends very largely on cultivation, climate, method of farming, etc. Yet, as stated above, by taking those states having similar conditions in these respects, definite conclusions may be deducted.

The following tables show that in two essential points, production per acre and earnings per acre, Wisconsin leads all the states that have large areas of undeveloped agricultural lands. Ohio, Indiana, Illinois and Missouri average about the same in earnings per acre as Wisconsin, while Kansas, Nebraska, the Dakotas and Minnesota fall below the Wisconsin average in earnings. In six of the nine commodities mentioned Wisconsin is materially above the average for the entire United States in the matter of earnings.

But Wisconsin, by reason of her diversified industries makes a better showing still when all farm products are included in the computation. The federal census returns furnish the basis for such a computation for the year 1899, in which all farm products inclusive of live stock, butter, cheese, milk, poultry, eggs, vegetables, fruit, and everything sold from the farm is included in the value of the farm products and the acreage of cultivated land is given. By arranging the manufacturing states and the agricultural states in groups, as in the two tables following, the value of a home market to the farmer is made apparent. Earnings per acre advance in due proportion with the number of factories and wage-earners and the amount of money paid out in wages. The table on page 379 shows the influence of the manufacturing industries on the prices paid for specific crops; the next table, the earnings per acre from all farm products.

FROM CENSUS RETURNS FOR YEAR 1899, AND CROP REPORTED FOR DECEMBER, 1905.
Value of Crops per Acre by Groups of States *

	No. of factories.	Hands employed.	Total wages paid	Value of production.	Corn.	Oats.	Barley.	Rye.	Potatoes	Hay.	Winter wheat.	Spring wheat.
Michigan	16,807	162,355	\$66,467,867	\$356,644,082	} \$15.54	} \$10.17	} \$12.54	} \$9.80	} \$44.08	} \$14.40	} \$14.59	} \$12.61
Indiana	18,015	155,956	66,847,610	378,120,140								
Illinois	38,360	395,110	191,510,932	1,259,730,168								
Wisconsin	15,187	142,078	58,407,597	360,818,942								
North Dakota	1,130	2,398	\$1,222,472	\$9,183,114	} \$10.57	} \$8.78	} \$8.18	} \$8.46	} \$38.19	} \$8.23	} \$14.20	} 9.80
South Dakota	1,639	3,121	1,544,409	12,231,239								
Iowa	14,819	58,553	23,931,680	164,617,877								
Minnesota	11,114	77,234	35,484,825	262,655,881								
Kansas	7,830	35,193	\$16,317,689	\$172,129,398	} \$9.85	} \$8.25	} \$8.14	} \$8.04	} \$40.72	} \$7.06	} \$11.66	} \$9.62
Nebraska	5,414	24,461	11,570,688	143,990,102								
South Dakota	1,639	3,121	1,544,409	12,231,239								
North Dakota	1,130	2,398	1,222,472	9,183,114								

* The prices given for the agricultural products in this table are the averages for the four states of each group.

FROM CENSUS REPORT FOR YEAR 1890.
Average earning per acre by groups of states.

	Total value of farm products	Total crop average.	Earnings per acre.	Average per acre.
Michigan.....	\$146,517,681	8,092,013	\$18 10	\$17 79
Indiana.....	204,450,196	11,407,798	17 83	
Illinois.....	345,649,611	20,865,406	16 51	
Wisconsin.....	157,445,713	8,270,127	18 71	
Iowa.....	365,411,528	22,170,701	16 48	10 69
Minnesota.....	161,217,301	15,139,962	10 65	
North Dakota.....	64,252,494	7,821,875	8 20	
South Dakota.....	66,082,419	8,848,734	7 41	
Kansas.....	209,895,542	18,394,271	10 92	9 32
Nebraska.....	162,696,386	15,153,956	10 72	
North Dakota.....	64,252,494	7,821,875	8 20	
South Dakota.....	66,082,419	8,848,734	7 41	

The following table shows the average earnings per acre for the years 1896-1905 inclusive, received for the various crops indicated, except for flax and tobacco. The prices for flax is for the year 1905. For tobacco the average for the years 1900-1905 inclusive.

State.	Pota- toes.	Corn.	Wheat	Oats.	Bar- ley.	Rye.	Buck- wheat.	Flax.	Hay.	To- bacco.
Michigan.....	\$31.08	\$12.91	\$10.56	\$9.70	\$11.80	\$7.30	\$7.17	.....	\$11.64	\$52.98
Ohio.....	36.92	12.61	10.70	9.93	12.25	8.79	9.75	.....	11.61	64.27
Indiana.....	34.15	10.82	7.31	8.00	11.60	7.01	9.81	.....	10.81	50.09
Illinois.....	39.26	10.99	9.44	8.36	11.54	8.46	9.41	.....	10.78	40.28
Missouri.....	34.96	9.01	8.54	6.03	9.15	7.50	10.09	\$6.79	8.96	69.78
Iowa.....	30.52	9.26	8.97	7.11	8.47	7.46	9.27	9.80	8.47	.....
Kansas.....	37.72	6.80	8.60	6.44	5.72	6.24	9.61	6.64	6.19	.....
Nebraska.....	31.90	7.59	8.98	6.41	7.21	6.41	9.55	8.98	6.42	.....
S. Dakota.....	30.10	7.75	6.70	7.43	7.57	6.45	.....	9.30	5.04	.....
N. Dakota.....	33.77	8.44	7.54	7.69	7.46	6.32	7.12	9.74	5.78	.....
Minnesota.....	30.56	8.93	8.80	8.03	8.65	8.29	7.87	9.71	8.56	.....
Wisconsin.....	39.09	12.03	11.10	9.15	11.91	7.93	8.17	11.83	11.55	104.82
Average for U. S.	43.31	9.15	9.35	8.34	10.35	8.10	8.58	9.45	11.54	.....

The figures in the above tables are taken from the reports of the Department of Agriculture and are based upon an average for the years, 1896-1905 inclusive, except as otherwise stated. In the production of potatoes, Wisconsin stands second to none except North Dakota and produces about 18 bu. per acre more than the average for the United States. It stands fourth in the production of corn and produces 8 bu. per acre more than the average for the United States. In the production of wheat, it stands first and produces over 2 bu. per acre more than the average for the United States. In oat production it is only equaled by Ohio and produces over 5 bu. per acre more than the average for the United States. In the production of barley it excels all other states in this list and produces about 4 bu. per acre more than the average for the United States. It stands sixth in the production of rye and does not greatly exceed the average production for the United States. In the production of buckwheat it stands about fourth and produces nearly 3 bu. less than the average for the United States, while in tobacco it exceeds the average for the United States by over 500 lbs. and 734 lbs. per acre more than any other state in this group. In the production of hay it is better than the average.

The character and amount of agricultural products of a state are indicative of what it can be made to do in the production of live stock. Of the above states, Wisconsin stands seventh in the number and value of horses and mules, first in milch cows, sixth in other cattle, fourth in sheep, and seventh in swine. This indicates that under present conditions Wisconsin is up to the average of the other states of this group in the production of horses, mules and swine and is much higher than the average in the production of sheep, milch cows, and other cattle. This does not mean that there is a greater number of milch cows in Wisconsin than in Iowa, but it does mean that Wisconsin is supporting a larger number of cows per acre of farm lands than any other state in this group. Its rank as to the other kinds of live stock is ascertained in this same way.

MANUFACTURING.

The total number of manufacturing establishments having an output of \$500 or over increased from 7,841 to 8,558, or 9.1 per cent from the year 1900 to 1905. The amount

of capital invested in these establishments increased from \$286,060,566 to \$416,447,051 or 45.6 per cent. The number of salaried officials, clerks, etc., increased from 10,480 to 14,220 or 35.7 and the salaries paid increased from \$10,492,562 to \$15,498,232 or 47.7 per cent. The number of wage-earners increased from 137,525 to 151,391 or 10.1 per cent, and the total wages paid increased from \$55,695,816 to \$71,471,805 or 28.3 per cent. The miscellaneous expenses of these establishments increased from \$31,871,426 to \$45,674,156 or 43.3 per cent and the cost of materials used increased from \$185,695,393 to \$227,255,092 or 22.4 per cent, while the value of products including custom work and repairing increased from \$326,752,878 to \$411,139,681 or 25.8 per cent. Those establishments having an output of less than \$500 annually are almost wholly made up of such industries as hand trades, building trades, dress making, custom millinery, custom sawing and grinding, cobbling and blacksmithing. These do not form a part of our sugar factory system proper.

In the production of beet sugar Wisconsin probably ranks third producing about 21,000 tons in 1906, while in the census of 1900 no production of beet sugar is reported. Several small sugar plants had been built prior to that date but all had failed, because of poor management, lack of capital, and insufficient supply of raw material, and in one case, defective machinery. Since 1900 four factories have been built within the state and one across the boundary line in Menominee, Michigan, at an aggregate cost of \$3,700,000, and a total capacity of about 3,500 tons. About 70 per cent of the beets used in the Menominee factory are grown in Wisconsin, making it practically a Wisconsin factory. At the present rate of growth in this industry, Wisconsin is destined to soon take the lead in the manufacture of beet sugar. The soil in nearly every part of the state is well adapted to beet culture and with proper cultivation a good crop is always assured. The amount raised per acre varies from seven to thirty tons, and averaged 17.37 tons for eleven seasons in which beets were grown on the University farm at Madison. The average returns per acre to the farmers of the state who have grown sugar beets amount to about \$65 clear of all expenses. It is the only crop grown by the farmers upon which the price is fixed before it is grown, and for which

the producer is reasonably sure of what the returns will be in advance of harvest time. This element of certainty is a leading factor in the rapid growth of this industry. This crop is hard on the soil, but by rotating it with oats, corn and tobacco or wheat, the fertility of the soil is not materially impaired.

DAIRYING.

Wisconsin leads all other states in the number of cheese, butter, and condensed-milk factories. From 1890 to 1900 these factories increased from 966 to 2,018, or more than doubled. The state Dairy and Food commissioner reports that there are over 1,600 cheese factories and about 1,300 creameries and skimming stations in the state at the present time. Measured according to product, Wisconsin produces more cheese butter and condensed milk than any other state in the Union. Its output of these products is 1-6 of the total output of the United States, twice as much as the combined output of all the New England States, one-half as much as the total produced in New York, New Jersey, Pennsylvania, Delaware and Maryland, one-half as much as is produced in Ohio, Michigan, Indiana, Illinois; Minnesota, and Iowa, and one and one-tenth times as much as is produced in Kentucky, Tennessee, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Louisiana, Arkansas, Texas, Oklahoma, Kansas, Nebraska, South Dakota, North Dakota, Montana, Idaho, Washington, Oregon, California, Nevada, Utah, Colorado, Wyoming, New Mexico, and Arizona.

The census for 1900 shows that Wisconsin produced cheese, butter and condensed milk to the amount of \$50,393,016 from 998,397 cows, or an average of over \$50 per head, while the average for the United States is only \$35 per head. This includes the amount of these products produced on farms as well as in factories.

From 1900 to 1905 the amount of cheese manufactured in the state increased from 60,000,000 pounds to 110,000,000 pounds, or 83 $\frac{1}{3}$ per cent. During the same period the amount of butter produced on the farms and in the creameries increased from 80,000,000 to 123,000,000 pounds, or 53 $\frac{3}{4}$ per cent. This remarkable growth of the dairy industry is partly due to increased production in the older dairy counties, but

more particularly to the impetus that has been given the industry in counties in the central and northern sections of the state and in counties where cheese and butter making were comparatively unknown at the beginning of the period. Six years ago there were but few factories in central and northern Wisconsin; now Waupaca, Shawano, Clark, Wood, Marathon, Portage, Eau Claire, Chippewa, Taylor, Lincoln, Barron, Polk, Burnette, Brown, Oconto, and Marinette may be classed as dairy counties owing to the importance that cheese and butter making have assumed in their industrial economy. Other northern counties, such as Price, Ashland, Douglas, Sawyer, Washburn, Rusk, Oneida, Vilas and Iron already are preparing to follow in the footsteps of the neighboring shires before named and another decade will see the dairy industry firmly established there.

Every recognized authority on dairying who has made an investigation of the northern Wisconsin counties has expressed the opinion that the day would come when that section of the state would be recognized as the greatest cheese section in the United States. The cool nights of the summer months, the pure water of the celebrated Wisconsin lake region, and last, but most important, the nutritious grasses of the famous "grassland" region of the state, all contribute to make this the ideal dairy section. For twenty-five years Prof. W. A. Henry, dean of the Wisconsin College of Agriculture and former Gov. W. D. Hoard, one of the founders of the Wisconsin Dairymen's Association, editor of Hoard's Dairyman, and an authority on dairying who has an international reputation, have been firm in the opinion, frequently expressed, that all of the conditions that are required for successful dairying, and for cheese making in particular are to be found in northern Wisconsin.

THE WISCONSIN "GRASSLAND" SECTION.

More than half a century ago, while Wisconsin was still a territory, the lumbermen found their way into northern Wisconsin. As soon as it was possible for them to "tote" tame hay to their logging camps to feed their stock they began to scatter the seeds of the volunteer grasses that have made northern Wisconsin the famous "grassland" section of the northwest. It was first noticed that the logging roads and "tote" roads, over which supplies were hauled to camps, would in

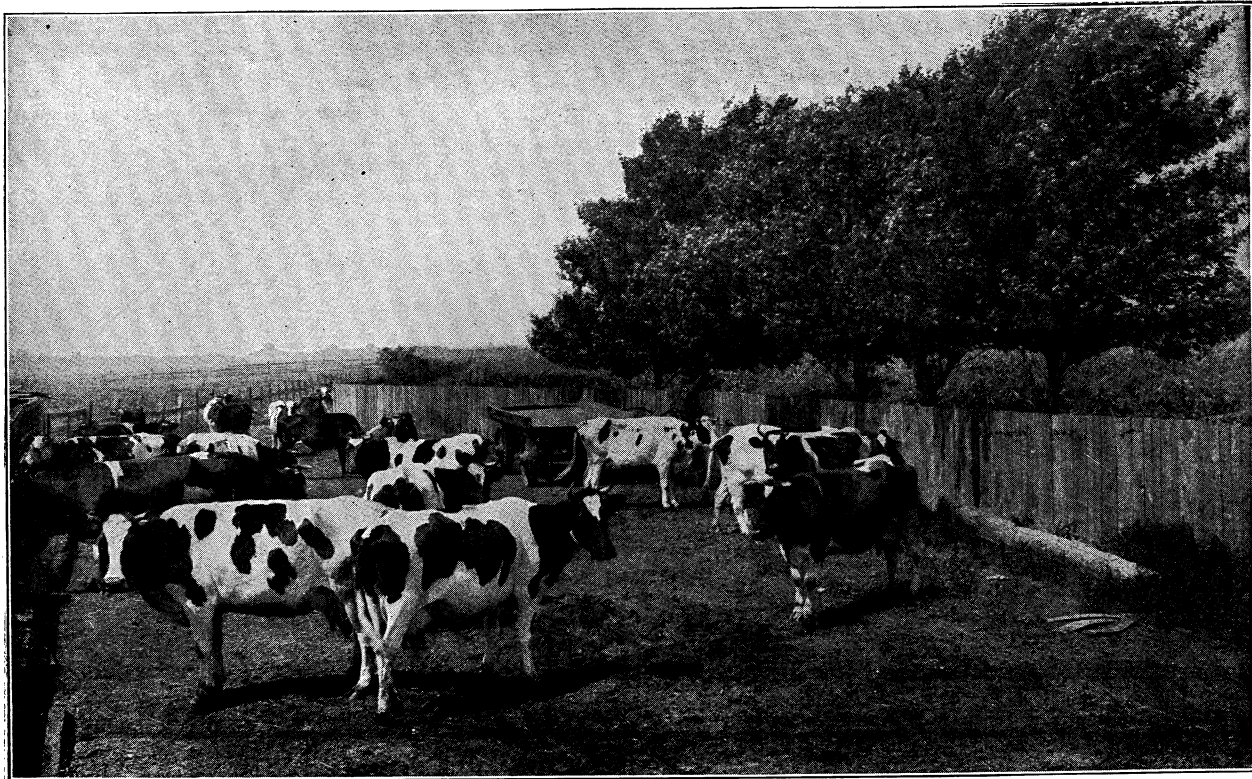
summer be covered with rank growths of timothy. This prompted some of the lumbermen to clear tracts upon which they scattered grass seed and the resulting crop of hay was in every case surprising.

At the present time the consequences of that early seeding are everywhere apparent. There are thousands of square miles of wild lands in northern Wisconsin where volunteer grasses, timothy, alsike, red and white clover, and Kentucky blue-grass are to be found wherever there is an opening where the sun can shine upon the ground. There are thousands of acres of burned over lands, miles from any human habitation and from roads as well, upon which patches of clover or timothy may be found in openings where the brush has not yet shut out the sun. White clover is found by the road sides, in the village streets, in pastures where it has fought for a place among the cultivated grasses. It runs out lawn grass in the villages and cities; it has been known to grow over and cover gravel walks; it is believed by many residents of that section that even the pernicious dandelion will never be able to invade the territory where the white clover reigns.

In some parts of the grassland section alsike clover is almost as persistent as white clover, and the two make good pasturage for cattle and sheep on the burned and cut over lands. Experiments are now being made in fattening stock for market on these lands. Large numbers of sheep are shipped from the Montana ranges in the spring to the northern Wisconsin tracts, to be marketed in the fall in Chicago and Milwaukee. Cattle, known as "feeders," are bought in St. Paul and allowed to graze upon the wild lands where they find abundant pasturage. Where these experiments have been properly managed they have resulted successfully.

OPENINGS FOR INVESTEMENT OF CAPITAL.

About 1-40 of the wool and 1-50 of the woollen goods produced in the United States are produced in Wisconsin. This would indicate that this state is a fair field for the manufacture of woollen goods. The same is true of the wheat flour and the meat packing industries. Wisconsin produces about 1-12 the wheat of the United States and less than 1-20 of the flour, while it produces 1-30 of the live stock and 1-50 of the packing-house products.



NORTHERN WISCONSIN DAIRY COWS AND ORCHARD.

In the canning and preserving industry Wisconsin is below the average. The value of these products in this state is less than \$1,000,000 while it exceeds \$45,379,000 in the United States. Wisconsin's products in this line of industries come wholly under the head of "canned vegetables." The abundance with which vegetables, apples, and berries of all kinds can be grown in this state would indicate that capital could very profitably be invested in further developing the canning industry.

The manufacture of potato starch offers another opening for the investment of capital. Maine stands first in the production of this article, Minnesota second and Wisconsin third, while the latter produces more potatoes than both Maine and Minnesota combined.

The tobacco industry affords another opportunity for the investment of capital. In the amount of tobacco grown this state ranks sixth, and eighth in the amount of cigars and cigarettes produced and twelfth in the amount of chewing and smoking tobacco manufactured. In the production of these prepared tobaccos the manufacturers of the state consume about seven million pounds of leaf tobacco, while the state produces over fifty million pounds annually. This means that about forty-three million pounds of raw material are annually shipped out of the state that could very profitably be manufactured within its borders.

Another illustration of what could be accomplished along this line is offered in the leather industry. Wisconsin stands third in its value of leather, (tanned, curried and finished,) while it ranks fourth in the manufacture of gloves and mittens, and tenth in the boot and shoe industry.

In lumber and planing-mill products Wisconsin leads all other states. This, in itself, affords a much larger field for the manufacture of furniture and other commodities in which lumber is the principal material used, than is yet utilized in the state.

The state affords a fruitful field for the curing and packing of fresh-water fish.



LOGGING SCENE, NORTHERN WISCONSIN.

PORTLAND CEMENT.

An industry that is destined at no distant day to become one of the most important in the state is the manufacture of Portland cement. The raw material for the manufacture of the best quality of this cement are marl and clay, and to make these materials available the percentage of magnesia in the two when mixed must be as low as possible, and, in any event, it must be below 4 per cent. The clays preferred are those that run high in silica and aluminum and low in magnesia and iron oxide; the marl is principally valuable for its lime. Were it not for the fact that as a rule limestones carry too high a percentage of magnesia and iron oxides they could be used as a substitute for marl, but there are few known deposits of limestone in this country that will answer the purpose.

Marl is a sedimentary deposit caused by chemical action in lake water. Owing to the fact that it is found to contain marine shells it has been popularly supposed to be composed entirely of decomposed shells, but this is an error. The geological survey of the state has disclosed the fact that there are almost inexhaustible quantities of marl in the lake beds and the dry beds of old lakes, now swamps and marshes, in the northeastern, central and southern portions of the state. There are also known to be large deposits of the quality of clay required by this industry. The kaolin clays of the central part of the state are admirably adopted for use in making Portland cement and there are other deposits that fill all the requirements of the industry. While a detailed survey has not yet been made in the state to ascertain the approximate quantity of marls and clays that can be utilized in the manufacture of the best quality of Portland cement, enough has been done in this line to warrant the assertion that the supply of raw materials is practically inexhaustible.

Cheap fuel is required in the Portland cement industry and cheap power is another essential. While Wisconsin has no coal mines, the quality of coal needed for fuel can be shipped by water to any of our lake ports. Again, there are thousands of acres of peat bog in the state that can be converted into gas at a trifling cost and used for heating the furnaces, while the near proximity of water powers affords an opportunity to secure the cheapest power in the world for driving the machinery

of the plants. Already the transmission of electricity from central water power plants has become so common that it is unnecessary to discuss this phase of the subject as a problem.

Wisconsin consumes approximately 1,500,000 barrels of Portland cement a year and the demand is increasing at a rapid rate. With the decadence of the lumber industry the Portland cement industry is assuming enormous proportions, cement being used as a substitute for lumber and stone in all classes of buildings, bridges, viaducts, subways, dams, and in canal construction. With cheap raw materials, cheap power, and cheap fuel, Portland cement can be manufactured as cheaply in Wisconsin as in any state in the Union. The freight on a barrel of cement from Pennsylvania, where a large part of the product is manufactured, is 70 cents, and the saving on freight alone would pay an enormous dividend on the capital stock of a Wisconsin factory. It would take five factories, each of a 1,000 barrel daily capacity to supply the local demand alone, and the annual increase in the demand will furnish a market for the product of a new factory every year.

It should be remembered that in Wisconsin in some cases the two raw materials, marl and clay, are found side by side. This is true of those materials at the site of a plant to be built the coming year near Portage, in Columbia county. The marl lies in the bed of a lake; the clay is found on the bank of the same lake. And, in addition to this, there is a large peat bog near the factory site that will be converted into producer gas with which to heat the furnaces where the cement clinkers are burned. Power will be transmitted from a near by water power where electricity will be generated and sold to customers.

In Michigan, where the Portland cement industry has been developed to enormous proportions, there is little clay that can be used for its manufacture and the necessary supply is shipped from Ohio. This fact is mentioned merely to show how favorably Wisconsin is situated for the development of this industry.

In other industries, Wisconsin ranks as follows:—third in the production of shingles, tenth in clay products, fifth in paper and pulp, twelfth in value of newspaper products such as subscriptions, sales and advertising, tenth in value of iron and steel products and products of blast furnaces, ninth in steel works and rolling mills, third in the production of zinc-oxide,

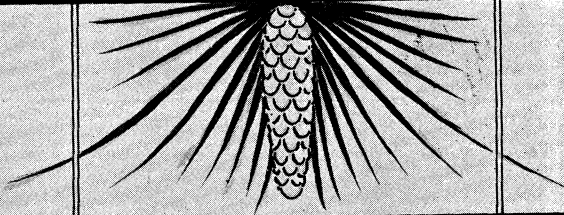
tenth in electrical apparatus and supplies, seventeenth in ship building, tenth in motor vehicles, eleventh in cars and general shop construction and repairs, seventh in carriages and wagons, fifth in bicycles and tricycles, fourth in agricultural implements, and value of motive power appliances such as steam engines and water motors, thirteenth in production of coke and twelfth in the manufacture of gas.

MINES AND QUARRIES OF WISCONSIN.

The value of the output of the mines and quarries in Wisconsin in 1902 was \$4,427,813, or 1.2% of the total value of the product of manufacturing and mining industries of the state. Wisconsin ranks 12th among the states in agriculture, 9th in the gross and net value of its manufactured products and 30th in the value of its mineral products. The mines and quarries of the state in 1902 employed 3,583 wage-earners. The value of the principal minerals produced in the above year were as follows: Iron ore, \$1,800,864; lead and zinc \$473,652; siliceous and crystalline rocks, \$369,137; sandstones and quartzites, \$207,086. and limestones and dolomites, \$1,351,058.

Iron ore, similar to that of Michigan occurs in Wisconsin south of Lake Superior. The development of these mines has been greatest since 1884 in the Gogebic district. In 1902 the state produced 783,996 long tons of iron ore, 79% of which was mined in Iron County. A new iron mining region and one which bids fair to grow to considerable proportions has recently been opened near North Freedom, in Sauk County. In 1905 this mine produced nearly 80,000 tons of ore. Traces of iron have been found in nearly all of the two northern tiers of counties, some of which are very promising.

The most important part of the upper Mississippi valley lead and zinc district is in southwestern Wisconsin comprising Grant, Iowa and Lafayette counties. Lead mining in these counties has been general since 1830, and zinc mining since 1860, the latter product growing to greater relative importance annually. In 1902 the total production of lead and zinc ores was about 21,999 short tons having a value of \$473,652. Of this production only 2,623 tons were lead ores. Of the 90 mines operated in 1902, 27 mined lead only, 23 mined zinc



A RIVER IN PRICE COUNTY.

only and 40 mined both lead and zinc ores. The number and output of these mines have increased very rapidly since the above date. The present development of this region is due in a large measure to the use of modern methods of mining and concentrating the ores to displace the primitive methods so long in use. Within the last four years some thirty or more mines have opened up with modern machinery much of which is similar to that used in the Joplin zinc district. Large quantities of ore of high grade are being sent out of the district.

A large amount of the early mining in this region was confined to very shallow workings. In certain places the ground down to a depth of twenty feet from the surface has been literally honey-combed by this early work, there being many tracts with surface indications of these diggings. It was customary to sink pits very close together along crevices and from the bottoms of these pits tunnels were run out. Speaking of these tracts, the Wisconsin Geological Survey says, "These old workings furnish at the present time the very best places for prospecting, and in fact it may be said that practically all of the larger mines working today are operating on the lower portions of deposits which were worked close to the surface in years gone by. There are most excellent reasons for believing that within the lower 75 feet of the Galena limestone and the upper part, perhaps the upper 15 feet, of the Trenton limestone, there exists such a quantity of lead and zinc ore, especially zinc ore, that the supply will not be exhausted for a number of years to come. This statement is made after a careful consideration of the facts in the case and a study of the mines which have been recently opened up." Additional mining ranges are being discovered from time to time, and old ranges are being extended. The fact that there are hundreds of ranges already known, only the upper parts of which have been mined and that below many of these there are rich deposits of zinc and lead ore, are sufficient reasons for believing the future will see more zinc ore produced from this district than has been produced in the past. Capital and improved mining methods are the immediate needs of this region. With the interest at present shown by capitalists and investors and the extensive operations planned or already under way, Wisconsin is destined to occupy a most important position among the lead and zinc producing states of the Union.

Limestone underlies a large part of the state. It ranges in color from straw-yellow to a dark bluish grey and much of it is excellently adapted for building purposes. Wisconsin ranks seventh among the states in the production of limestone, the value of the products being \$1,351,058, of which amount \$296,998 represents building stone which is quarried principally in Brown, Door, Milwaukee, Rock and Waukesha counties. The largest quarries are in Calumet, Door, Fond du Lac, Manitowoc, Racine and Waukesha counties, where there are still many fine opportunities for development.

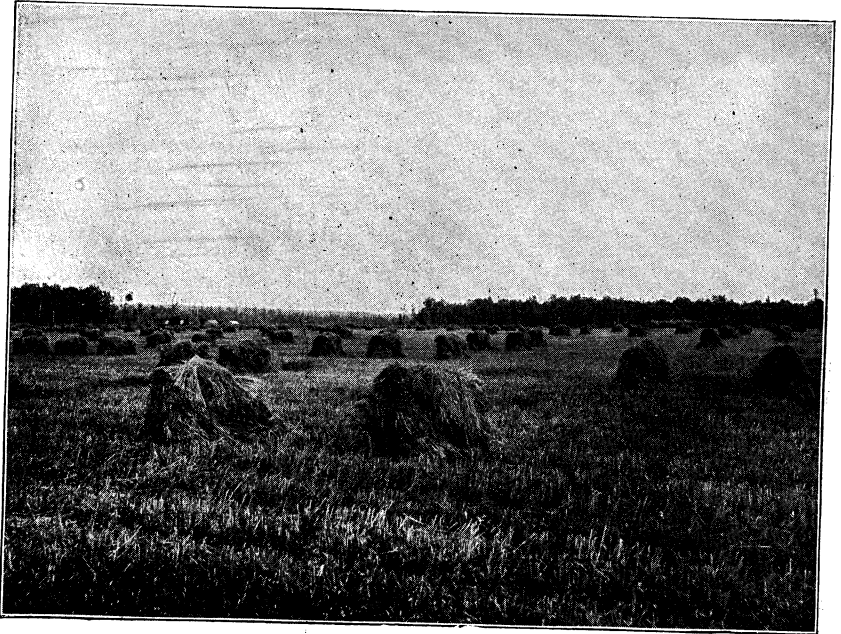
About one-third of the area of the state is underlaid with the older siliceous crystalline rocks, the quarrying of which during the last twenty-five years has assumed considerable proportions. For monumental purposes Wisconsin granite has no superiors and for structural purposes, the quarries can furnish either gray or red granite of any required dimensions. No state in the Union has such a bountiful supply of materials for road constructions. The granites vary in texture from exceedingly fine grained to the coarse grained porphyritic varying in color from a brilliant red to a dark gray. The best quarries are located in Dodge, Green Lake, Marathon, Marinette, Marquette, Sauk, Waupaca and Waushara counties. The output of the eighteen largest quarries in the state is approximately \$400,000.

One of the most widely distributed building stones, having a great variety of color and texture, is the Wisconsin sandstone. This stone appears in the northeast corner of the state and swings in a broad belt to the southwest and then again to the northwest. A second belt crosses the state south of Lake Superior. Stone from this belt has been selected for building purposes in many states. Sauk county ranks first among the sandstone producing counties, with Dunn second and Bayfield third. These quarries in most instances are small and but slightly developed but the opportunities for extensive quarrying are numerous and unexcelled.

MARKETS.

Geographically, Wisconsin is advantageously placed with respect to markets. From its ports on Lakes Superior and Michigan the products of its farms, factories, mines, mills, and quarries are shipped by water to the east. On the western

border is the Mississippi river, a waterway that exercises a strong influence on freight rates, although the river borne freight has not been of great volume during recent years. The state is well served by railroads, there being no section that is entirely cut off from connection with distributing points by rail, even in the newer and more sparsely settled portions of the north, and new lines are now being constructed that will further increase the efficiency of the transportation service.



NORTHERN WISCONSIN.

But that is not all. The state has a large urban population engaged in mercantile and manufacturing industries, and in transportation. This population resides in cities and villages ranging from 350,000 people to a few hundreds, all consumers of the products of the farms. Beyond the borders of the state, but still within the limits of what may be called the home market, are Chicago, the mining and manufacturing region of the upper peninsula of Michigan, the mining and lumbering region of northern Minnesota, and the prairie states lying west of the Mississippi to which Wisconsin manufacturers ship farming implements and machinery, engines, furniture, chairs, and a large line of commodities manufactured from na-

tive woods and metals. In the territory outlined there is an urban population alone of 4,262,673, and Wisconsin, with her vast resources of fruitful soil, raw materials, and transportation facilities lies in the center of this market where the demand never fails and prices are uniformly remunerative.

SUMMER RESORTS.

As a summer-resort state, Wisconsin is probably unexcelled. The thousands of fresh-water lakes scattered over the northern and eastern portions of the state, filled with bass, perch, pickerel, and other fresh-water fish; the hundreds of fresh-water streams abounding in speckled and rainbow trout, vast forests with an abundance of deer and small game of all kinds, all combine to make Wisconsin a most desirable place for those who love the quiet haunts of lake or stream, and to get away from the busy life of the city for a summer's vacation.

TO HOMESEEEKERS.

The advantages that the homeseeker will find in northern Wisconsin may be enumerated as follows: Cheap land; cheap fuel; cheap building material; fertile soil; pure water; healthful climate; markets for everything that can be produced on a farm; an opportunity to find employment during winter months when the prairie farmer is idle, or to employ himself on his own land at a profit in getting out cord wood, fence posts, pulp wood—which now sells at \$7 a cord—telegraph and telephone polls; creameries and cheese factories already established or rapidly being built and put in operation; good schools; a progressive, energetic, prosperous citizenry, and ample railroad facilities.

It takes work to build a home and clear a farm in northern Wisconsin, but the man who is willing to work and who will work intelligently can always secure ample returns for his labor. Where there is timber on the land, every stick can be sold at a good price, enough to pay for clearing the land, and the increase in the value of the cleared land will be clear profit. Where there is little or no timber, as in some of the burned over tracts, the cost of clearing is inconsiderable and the increase in value of the land when cleared is ample pay for the

work put upon it. When a man can buy land at from \$7 to \$15 an acre, and, by clearing it, make it worth \$50 an acre, he is employing his time to some profit, particularly as he is providing for himself a home and making himself independent of panics, industrial depressions, strikes, lockouts, landlords, or any of the other ills that workingmen or renters most dread.

POPULATION.

The population of the various political divisions of each county will be found in connection with the discussion of each county in the succeeding pages of this report. The following table shows, in a general way, the movement of population from the year 1900 to 1905. The first column gives the total population of each county, the second the area of each county in square miles, the third and fourth gives the population per square mile for the years 1900 and 1905 respectively, while the last two columns give the number and per cent of increase or decrease in the population per square mile. Eighteen counties show a decrease in population per square mile. Three of these are in the northern half of the state, three on the borderline between the northern and southern halves, and twelve are in the southern half. Every county in the state showing an increase of over 10% in the population per square mile is in the northern half of the state except Racine, Milwaukee and Kenosha.

County.	Popula- tion in 1905.	Area in square miles.	Population per square mile.		Increase (+) or decrease (-).	
			1900.	1905.	Number.	Per cent.
Adams...	9,062	682	13.40	13.29	—	.11
Ashland...	23,935	930	21.69	25.74	+	4.05
Barron...	28,376	878	26.97	32.32	+	5.35
Bayfield...	15,904	1,497	9.61	10.62	+	1.01
Brown...	52,026	518	89.50	100.44	+	10.94
Buffalo...	16,523	662	25.32	24.96	—	.36
Burnett...	9,261	881	8.49	10.51	+	2.02
Calumet...	16,889	317	53.87	53.28	—	.59
Chippewa...	32,000	1,002	28.33	31.94	+	3.61
Clark...	29,344	1,200	21.54	24.45	+	2.91
Columbia...	31,192	776	40.10	40.20	+	.10
Crawford...	16,926	537	31.03	30.39	—	.64
Dane...	75,457	1,188	58.45	63.52	+	5.07
Dodge...	45,773	884	52.75	51.78	—	.97
Door...	19,631	454	38.73	43.24	+	4.51
Douglas...	43,499	1,319	27.55	32.98	+	5.43
Dunn...	26,074	844	29.67	30.89	+	1.22
Eau Claire...	33,519	620	51.12	54.06	+	2.94
Florence...	3,522	498	6.42	7.07	+	.65
Fond du Lac...	50,855	720	66.10	70.59	+	4.49
Forest...	5,968	1,424	.98	4.19	+	3.21
Grant...	39,629	1,157	33.61	34.25	+	.64
Green...	22,390	576	39.44	38.87	—	.57
Green Lake...	15,838	364	43.40	43.51	+	.11
Iowa...	22,971	763	30.29	30.11	—	.18

County.	Population in 1905.	Area in square miles.	Population per square mile.		Increase (+) or decrease (-).	
			1900.	1905.	Number.	Per cent.
Iron	6,559	786	8.42	8.35	- .07	.83
Jackson	17,579	978	17.86	17.97	+ .11	.61
Jefferson	34,293	518	63.84	62.58	- 1.26	1.97
Juneau	20,759	790	26.11	26.28	+ .17	.65
Kenosha	27,356	274	79.02	99.84	+ 20.82	26.35
Kewaunee	17,003	327	52.64	52.00	- .64	1.22
La Crosse	42,850	475	90.52	90.21	- .31	.34
Lafayette	20,277	634	33.06	31.98	- 1.08	3.27
Langlade	15,738	855	14.68	18.41	+ 3.73	25.41
Lincoln	19,125	885	18.88	21.61	+ 2.73	17.51
Manitowoc	44,796	590	71.63	75.93	+ 4.30	6.00
Marathon	50,249	1,532	28.23	32.80	+ 4.57	16.19
Marquette	33,730	1,396	22.08	24.16	+ 2.08	9.42
Marquette	10,974	451	23.30	24.33	+ 1.03	4.42
Milwaukee	383,721	228	1447.44	1595.27	+ 147.83	10.21
Monroe	29,263	915	30.71	31.98	+ 1.27	4.13
Oconto	24,580	1,080	19.33	22.74	+ 3.43	17.69
Oneida	11,294	828	9.66	13.56	+ 3.70	37.53
Outagamie	49,015	684	72.14	71.66	- .48	1.75
Ozaukee	17,476	226	72.40	77.33	+ 4.93	6.81
Pepin	7,569	238	33.21	31.60	- 1.61	4.52
Pierce	23,433	543	44.09	43.15	- .94	2.13
Polk	20,885	933	19.08	22.38	+ 3.30	17.30
Portage	30,861	800	36.85	38.58	+ 1.73	4.69
Price	12,353	1,241	7.34	9.95	+ 2.61	35.42
Racine	50,228	323	141.31	155.50	+ 14.19	10.04
Richland	19,345	576	33.82	33.59	- .23	.68
Rock	53,641	706	72.53	75.98	+ 3.45	4.75
Rusk	9,748	936	4.97	10.41	+ 5.44	111.47
St. Croix	26,716	711	37.73	37.58	- .15	.40
Sauk	32,845	820	40.25	40.05	- .20	.50
Sawyer	5,044	1,312	2.68	3.76	+ 1.08	40.30
Shawano	31,037	1,135	24.21	27.25	+ 3.14	12.97
Sheboygan	52,070	510	98.72	102.10	+ 3.38	3.42
Taylor	12,481	965	11.67	12.93	+ 1.26	10.80
Trempealeau	23,857	734	31.49	32.50	+ 1.01	3.21
Vernon	9,161	792	35.80	50.82	+ 1.02	2.85
Vilas	5,436	907	5.43	5.99	+ .56	10.51
Walworth	30,557	562	52.06	54.37	+ 2.31	4.44
Washburn	7,483	334	6.62	8.97	+ 2.35	35.49
Washington	23,478	423	55.76	55.50	- .26	.47
Waukesha	35,822	562	62.69	63.74	+ 1.05	1.67
Waupaca	33,467	749	42.21	44.68	+ 2.47	5.85
Wausara	17,643	639	25.00	27.61	+ 2.61	10.44
Winnebago	60,300	472	123.96	127.75	+ 3.79	3.55
Wood	30,380	785	32.95	38.70	+ 5.75	17.45
Total	2,228,949	54,450	38.00	40.94	+ 2.94	7.74



A PRICE COUNTY SHEEP RANCH, NORTHEAST OF PHILLIPS.

CHAPTER III.

WATER POWERS OF WISCONSIN.

The importance of water powers to a state so remote from coal mines as is Wisconsin is not likely to be overestimated. These powers are destined to exercise a wide influence on the development of the state. So far as is known not a single important river in the state has as yet been made to fully produce its available power. The low Fox river comes the nearest to this with a total of 31,898 actual horsepower, all produced in the 35 miles between Lake Winnebago and Green Bay. This large water power has caused this district to become an important paper and pulp manufacturing center. The Wisconsin, St. Croix and Chippewa rivers are each capable of producing power largely in excess of that yielded by the Fox river. The development of Wisconsin's water powers has been rapid, especially during the last fifteen years. During the decade ending in 1900 the gain was 75 per cent. The following statistics show this growth during the last thirty years:

WISCONSIN WATER POWERS DEVELOPED.

1870.....	33,700 horsepower.
1880.....	45,300 horsepower.
1890.....	56,700 horsepower.
1900.....	99,0000 horsepower.

The annual saving represented by this power over the cost of an equivalent amount of steam power, computed at \$20 per horsepower, reaches the sum of nearly \$2,000,000.

The abundant water-power resources of this state, and Wisconsin has more water powers than any other state in the

Union, are the result of its peculiar topography. Stretching across the northern part of the state there is a broad and flat highland, varying in elevation from 1,000 feet in the west to 1,900 feet in the east, and extending to within thirty miles of Lake Superior. In this plain most of the important streams find their headwaters, and descend rapidly to the west and southward, making many rapid falls and giving extensive water powers.

The St. Croix, Chippewa, Black and Wisconsin rivers drain 70 per cent of the northern half of the state, an area nearly as large as the state of Maine. The Lake Superior rivers drain only 9.3 per cent and those flowing into Green Bay the remaining 20.7 per cent.

In general, each of the important rivers may be divided into three divisions, differing widely in physical characteristics. First, the headwaters, marked by sluggish streams with low divides, fed by numerous and extensive swamps and lakes, frequently so interlaced that it is impossible to trace out the river divides. Here many of the lakes have dam sites forming natural reservoirs for the river below. Boulder rapids are here of frequent occurrence. Second, a stretch of maximum descent along the center reach of the river, abounding in numerous falls and long stretches of rapids. Third, the lower portion of the course, where for a distance of about fifty miles the river flows through sandstone and limestone, the descent being very slight. This region is, therefore, devoid of water power. In fact, the United States Government has improved the larger rivers along this reach for the purpose of navigation without the use of locks.

The general use and control of those northern rivers for logging purposes in the past tended to decrease the value of the water powers by withholding the water at times when most needed, but this use of rivers is now practically past. Railroad transportation has taken the place of river logging in all the leading river valleys, thus leaving the rivers free for the development of their water powers. The effect which these dams have had upon the stage of water in the past suggests their extension and systematic operation for the sole purpose of regulating the water supply and increasing the low water flow.

The United States engineers have surveyed thirty-two large

reservoirs in Wisconsin and have constructed five such reservoirs in Minnesota. The total capacities of the proposed Wisconsin reservoirs are as follows:

STORAGE CAPACITY OF PROPOSED WISCONSIN RESERVOIR.

River.	Acres of over-flow land.	Storage capacity. Cubic feet.
St. Croix	102,092	34,334,000,000
Chippewa	not given.	25,249,000,000
Wisconsin	25,832	18,557,000,000
Total		79,130,000,000

When it is remembered that nature has provided numerous large swamps and over 1,400 lakes in this region, the addition of the above large reservoirs and the maintenance of some of the logging dams, will have a very marked effect in steadying the river discharge.

The present availability of these water powers varies greatly on the different rivers or on parts of the same river. Those on the Wisconsin river are all reached by the Chicago, Milwaukee & St. Paul Railway which parallels the river for 100 miles and by other railways at different points. While the Chicago & Northwestern R. R., the Wisconsin Central R. R., the Green Bay & Western R. R. and the Minneapolis, St. Paul & Sault Ste. Marie R. R. touch the river at one or more points. The powers on the lower Chippewa are reached by the Chicago, Milwaukee & St. Paul, the Wisconsin Central and the Chicago, St. Paul, Minneapolis & Omaha Railways. The powers along the St. Croix and its tributaries are not so available owing to the small population, but with the recent rapid occupation of the land for agricultural purposes there will be a strong demand for better railroad facilities.

The following tables show the profiles of some of the leading water power streams in the state:

STATION.	DISTANCE.		Elevation above sea level.	DESCENT BE- TWEEN POINTS.	
	From Menasha	Between points.		Total.	Per mile.
	Miles.	Miles.	Feet.	Feet.	Feet.
Menasha dam, crest.....	0.0		746.1		
Appleton upper lock, crest.....	5.1	5.1	736.5	9.6	1.9
Appleton locks foot	6.3	1.2	699.7	26.8	30.6
Cedars lock, crest	9.6	3.3	699.7	.0	.0
Little Chute locks:					
Crest	10.6	1.0	690.0	9.7	9.7
Foot	11.6	1.0	653.8	36.2	36.2
Grand Kaukauna locks:					
Crest	13.3	1.7	653.8	.0	.0
Foot	14.2	.9	603.3	50.5	56.1
Rapids Croche lock:					
Crest	17.9	3.7	603.3	.0	.0
Foot	17.9	.25	593.9	9.4	37.6
Little Kaukauna lock:					
Crest	23.9	6.0	593.9	.0	.0
Foot	23.9	.2	517.7	6.2	31.0
Depere lock:					
Crest	29.8	5.9	587.7	.0	.0
Foot	29.8	.0	580.0	7.7	
Green Bay	35.2	5.4	580.0	.0	

* From United States engineer's profile of the river.

In this distance of 35 miles there is developed approximately 32,000 horsepower and there are opportunities for increasing this considerably. The extremely low rate at which water power may be rented (\$5 to \$10 per annum per horsepower) has already made this one of the largest manufacturing districts in the state.

No.	STATION.	DISTANCE.		E'leva- tion above sea level.	DESCENT BE- TWEEN POINTS.	
		From mouth.	Between points.		Total.	Per mile.
		Miles.	Miles.	Feet	Feet.	Feet.
1.	Mouth of river			580.0		
2.	Dam No. 1, foot	2.0	2.0	580.0		
3.	Dam No. 2, foot	2.5	.5	587.0	7.0	14.0
4.	Dam No. 3, foot	2.75	.25	594.0	7.0	28.0
5.	Schappies rapids, foot	7.7	5.0	612.0	18.0	3.6
6.	Schappies rapids, head	8.7	1.0	622.0	10.0	10.0
7.	Grand Rapids, foot (mouth of Little Cedar River.)	22.0	13.3	649.0	27.0	2.0
8.	Grand Rapids, head (N. W. ¼ Sec. 32, T. 34 N., R. 23 E.)..	24.5	2.5	669.0	20.0	8.0
9.	Railroad crossing, Ross	26.5	2.0	671.8	2.8	1.4
10.	White Rapids, foot (lot 1, Sec. 30, T. 35 N., R. 21 E.)	50.7	24.2	683.4	11.6	48.0
11.	White Rapids, head (south line, Sec. 7, T. 35 N., R. 22 E.)	53.7	3.0	714.4	31.0	103 0
12.	Pemena Rapids, foot mouth Pemena Creek)	61.5	7.8	749.3	30.3	3.9
13.	Pemena Rapids, head (south line Sec. 5, T. 36 N., R. 22 E.)	63.0	1.5	767.1	18.8	12.5
14.	Pemena Dam foot	67.0	4.0	773.1	6.0	15 0
15.	Pemena Dam, crest	67.5	.5	776.2	13.1	26.2
16.	Sturgeon Falls, foot	77.0	9.5	803.9	17.7	1.9
17.	Sturgeon Falls, head	77.5	.5	816.8	12.9	25.8
18.	Sturgeon River, mouth	78.1	.6	818.0	1.2	2.0
19.	Norway, Mich. (where public road joins river)	80.1	2.0	824.0	6.0	3.0
20.	Iron Mountain, Mich. (500 feet above old ferry)	84.1	4.0	851.0	27.0	6.7
21.	Little Quinnesec Falls, foot... 22. Little Quinnesec Falls, head....	85.4	1.3	873.0	27.0	20.7
22.	Big Quinnesec Falls, foot.....	85.65	.25	942.0	64.0	256.0
23.	Railroad bridge south of Iron Mountain	89.9	4.25	966.0	24.0	5.6
24.	Railroad bridge south of Iron Mountain	91.15	1.25	1,020.0	54.0	43.3
25.	Highway bridge south of Iron Mountain	92.4	1.25	1,045.0	25.0	20.0
26.	Railroad bridge, river siding... 27. Twin Falls (500 feet below lower rapids)	100.4	8.0	1,065.3	20.3	2.5
27.	Twin Falls (500 feet below lower rapids)	101.4	1.0	1,072.5	7.2	7.2
28.	Twin Falls (head of upper rapids)	102.1	.7	1,099.8	27.3	3.9

* Authority: No. 1, U. S. Lake Survey; Nos. 2-6, Menominee River Boom Company; Nos. 7, 8, and 10-18, T. W. Orbison; No. 9, Wisconsin and Michigan Railway; Nos. 19-27, U. S. Geol. Survey; No. 28, Chicago and Northwestern Ry.

The following table shows the estimated monthly discharge of the Menominee river near Iron Mountain, Michigan, from September, 1902, to December, 1905.

(DRAINAGE AREA, 2,415 SQUARE MILES.)

DATE.	DISCHARGE.			RUN-OFF.	
	Maxi- mum.	Min- imum.	Mean.	Per square mile.	Depth.
1902.	Sec. feet	Sec. feet.	Sec. feet.	Sec. feet.	Inchas.
September (4-30)	1,772	1,032	1,295	.536	.538
October	2,625	1,094	1,596	.661	.762
November	5,306	1,806	2,829	1.17	1.30
December	2,647	1,282	1,909	.790	.911
1903.					
April	6,780	1,705	5,175	2.39	2.14
May	11,560	4,698	7,496	3.57	3.10
June	8,020	1,540	3,417	1.57	1.41
July	6,670	1,806	3,553	1.70	1.47
August	7,630	2,467	4,049	1.94	1.68
September	10,650	2,575	5,091	2.35	2.11
October	6,130	2,719	4,057	1.94	1.68
November	3,669	6,874	2,505	1.16	1.04
December	2,719	1,705	2,150	1.03	.890
1904.*					
April	8,150	2,683	3,995	1.64	1.05
May	11,770	3,630	7,879	3.70	3.26
June	8,419	2,575	4,791	3.21	1.98
July	3,396	1,094	2,196	1.05	.909
August	3,242	1,032	2,125	1.01	.880
September	3,669	1,410	2,488	1.15	1.03
October	6,725	1,440	3,650	1.74	1.51
November	3,591	1,378	2,293	1.06	.949
December	2,199	1,672	1,838	.877	.761
1905.*					
April	7,140	4,265	5,282	2.19	2.44
May	9,250	2,503	6,810	2.82	3.25
June	9,250	1,806	5,011	2.07	2.31
July	7,140	1,573	3,850	1.59	1.73
August	3,390	1,540	2,120	.882	1.02
September	6,450	2,080	3,284	1.36	1.52
October	2,611	1,772	2,163	.896	1.03
November	2,432	1,410	2,204	.913	1.02
December	2,539	1,378	2,085	.863	.995

* Ice conditions January, February, and March. No estimate made.

The Menominee river, which is formed by the junction of the Michigamme and Brule rivers, is for a distance of 104 miles the northwestern boundary of the state. Its drainage basin has an area of approximately 4,000 square miles. The Michigamme river has its source within 12 miles of Lake Superior. This secures for it the advantage of the heavy rainfall of that region and, owing to the enlarged drainage area, serves to steady the flow. The Menominee river descends 700 feet in its total length, while its Wisconsin tributaries descend 300 feet and those in Michigan about 470. There is an im-

mense amount of water power awaiting development, remarkably fine opportunities being afforded by the frequent concentration of descent in rapids along the river course.

The valley of the Menominee river has had a comparatively rapid development. During recent years extensive lumber industries have been established and several large paper and pulp mills have been erected. Many rich and valuable iron mines have been opened and the acreage devoted to agriculture is rapidly increasing. This rapid development has resulted in extensive railroad building so that this region is now furnished with transportation facilities by the Chicago & Northwestern; the Chicago, Milwaukee & St. Paul; the Minneapolis, St. Paul & Sault Ste. Marie; and the Michigan & Wisconsin railroads. All of these lines cross the Menominee river one or more times and several are near enough to run short spur tracks to the desirable water-power sites.

The most important tributaries of the Menominee river in Wisconsin are the Brule and Pine rivers. The Brule river has five vertical falls but throughout its entire length of 42 miles it has a series of rapids or "strong water."

The following table shows a profile of the Brule river:

PROFILE OF BRULE RIVER, WISCONSIN, FROM ITS MOUTH TO SEC. 23, T. 41 N., R. 14 E.*

No.	STATION.	DISTANCE.		Elevation above sea level.	DESCENT BETWEEN POINTS.	
		From mouth.	Between points.		Total	Per mile.
		Miles.	Miles.		Feet.	Feet.
1.	Brule, Wis. (C. & N. W. bridge)	7.0	.....	1,260		
2.	½ mile below section line 22-23, T. 41 N., R. 15 E.	24.0	17.0	1,411	151	8.8
3.	Center of bend E. ¼ stake, Sec. 31, T. 41 N., R. 15 E. ...	29.5	5.4	1,431	20	3.7
4.	¼ mile west of east line, Sec. 24, T. 41 N., R. 14 E.	31.6	2.1	1,468	37	18.0
5.	0.4 mile below dam. Noted below	33.1	1.5	1,490	22	14.6
6.	Above dam 800 feet east of ¼ post, Sec. 22-23, T. 41 N. R. 14 E.	33.5	.4	1,507	17	42.5
7.	¼ mile east of section line 22-23, T. 41 N., R. 14 E.	35.5	2.0	1,520	13	6.5

* Authority: No. 1, Chicago and Northwestern Railway; Nos. 2-7, U. S. Geol. Survey.

The Pine river has a total length of 53 miles and drains an area of 586 square miles. In regard to this river the Tenth Census says that in the first half mile from its mouth the current is very rapid; in the next twelve or thirteen miles the fall is comparatively slight; and that in the next three miles there are two falls of eight feet, each 1,000 feet apart, half a mile of strong water, succeeded by another fall of twelve feet and then, half a mile above, a fall of forty feet.

The Peshtigo river flows through Marinette county and has a length of approximately 140 miles. It has a descent of an average of nearly ten feet to the mile, but few of its powers have as yet been developed, owing to the small population of this region. There are some excellent power sites with splendid opportunities for the construction of immense reservoirs. The following table shows the profile of this river:

PROFILE OF PESHTIGO RIVER FROM ITS MOUTH TO NEAR CRANDON.¹

Station.	Elevation above sea level.	Distance from mouth.	Authority.
	Miles.	Feet.	
Mouth of river		581.3	United States engineers.
Peshtigo	18	594.7	Wisconsin & Michigan Ry.
do	18	619.7	Chicago & Northwestern Ry.
West of Ellis Junction. . .	48	658.0	do
Near North Crandon.....	140	1,620.0	Minneapolis, St. Paul & Sault Ste. Marie Ry.

¹ Authority: L. S. Smith; U. S. Geol. Survey.

The Oconto river has its source in a number of lakes and swamps at an elevation of 1,530 feet above the sea. It is 87 miles in length in which distance it descends 945 feet. About two-thirds of its total fall is in the upper thirty-five miles of its course. The most important water powers are found in the last thirty-three miles of its course in which distance the river descends 190 feet. The following table shows the profile of the river:

PROFILE OF OCONTO RIVER, WISCONSIN, FROM ITS MOUTH TO WABENA.*

No.	STATION.	DISTANCE.		Elevation above sea level.	DESCENT BETWEEN POINTS.	
		From mouth.	Between points.		Total.	Per mile.
		Miles.	Miles.	Feet.	Feet	Feet
1.	Chicago and Northwestern Railway bridge, Oconto	2	.....	581	.....	.....
2.	Chicago, Milwaukee and St. Paul Railway bridge, Oconto	7	5	590	9	1.8
3.	Stiles	13	6	614	24	4.0
3.	Underhill	33	20	770	156	7.8
5.	Surings	44	11	791	21	1.9
6.	One mile south of mountain ..	60	16	916	125	7.8
7.	Two miles south of mountain ..	63	3	941	25	8.3
8.	Wabena	87	24	1,526	585	24.3

* Authority: Nos. 1 and 4-8, Chicago and Northwestern Railway; Nos. 2 and 3, Chicago, Milwaukee and St. Paul Railway. L. S. Smith; U. S. Geol. Survey.

The following table shows the location and extent of the most important developed and undeveloped water powers on the Oconto river:

WATER POWERS ON OCONTO RIVER.

No.	Location.	Estimated head.*	H. P. Installed.	Use.
Developed powers.				
1	Stiles, Sec. 34, T. 28 N., R. 20 E	Feet. 11	500	Saw and pulp mill.
2	Oconto Falls, Sec. 25, T. 28 N., R. 19 E	37	1,370	Paper and pulp mill.
3	Oconto Falls, Sec. 26, T. 28 N., R. 19 E	19	940	Pulp mill.
4	Puleifer, Sec. 6, T. 27 N., R. 18 E	12	45	Flouring mill and driving.
5	Sec. 25, T. 31 N., R. 16 E	12	.....	Driving only.
6	Sec. 4, T. 31 N., R. 16 E	10	.....	.....
7	Sec. 23, T. 32 N., R. 16 E	10	.....	.....
8	Sec. 30, T. 33 N., R. 17 E	12	.....	.....
9	Sec. 5, T. 33 N., R. 16 E	10	.....	.....
10	Sec. 1, T. 33 N., R. 15 E	10	.....	.....
11	Sec. 11, T. 32 N., R. 16 E	10	.....	.....
12	Sec. 34, T. 33 N., R. 16 E	10	.....	.....
13	Sec. 30, T. 33 N., R. 16 E	10	.....	.....
14	Sec. 27, T. 33 N., R. 15 E	12	.....	.....
15	Sec. 18, T. 31 N., R. 17 E	10	.....	.....
16	Sec. 33, T. 32 N., R. 17 E	10	.....	.....
17	Sec. 21, T. 32 N., R. 17 E	10	.....	.....
18	Sec. 23, T. 30 N., R. 16 E	10	.....	.....
19	Sec. 16, T. 30 N., R. 16 E	6	.....	.....
Undeveloped powers.				
20	Oconto, Sec. 23, T. 28 N., R. 21 E	12	.....	.....
21	Oconto Falls, Sec. 31, T. 28 N., R. 20 E	40	.....	.....
22	Sec. 34, T. 28 N., R. 18 E	15	.....	.....
23	Sec. 23, T. 31 N., R. 16 E	20	.....	.....

* The first four heads are reported by owners; the remainder are estimated by Mr. W. A. Holt, of the Holt Lumber Co., Oconto.

The Wisconsin river, because of its length, drainage area and central location is the principal power stream of the state. This river finds its source in a series of lakes and swamps in the plateau region of the northern part of the state. Its extreme source is in Lake Vieux Desert, a body of water with an area of about 10 square miles, located on the Michigan-Wisconsin state line at an elevation of 1,650 feet above the sea. The drainage basin includes 12,280 square miles, with an average width of 50 miles and a length of 225 miles.

This river offers many excellent opportunities for the construction of dams to serve as reservoirs in addition to their power value. The land adjoining the river can be purchased very cheaply and is owned by a comparatively small number of persons or corporations. Many such dams have already been constructed for logging purposes which will undoubtedly be maintained for their regulative effect upon the water flow long after their value to the logging industry has ceased. Sixteen lakes near the headwaters of this river have such logging dams regulating their flow and United States engineers have surveyed sites for the construction of dams at the outlet of eight lakes having an aggregate area of 87.45 square miles, a watershed area of 1,410.5 square miles and a capacity of 19,556,985,291 cubic feet. It is estimated that these reservoirs will maintain a flow of 3,000 second-feet for three months of the year, nearly doubling the present low-water flow of the river and its resulting water power and will serve to a large extent to reduce the dangers from high floods.

The following table shows the profile of the Wisconsin river:

PROFILE OF WISCONSIN RIVER FROM ITS MOUTH TO LAKE VIEUX DESERT.*

No.	STATION.	DISTANCE.		Elevation above sea level.	DESCENT BETWEEN POINTS.	
		From mouth.	Between points.		Total.	Per mile.
		Miles.	Miles.	Feet.	Feet.	Feet.
1.	Mouth of river			604.0		
2.	Sauk City	90.0	90.0	746.0	142.0	1.5
3.	Merrimac	102.0	12.0	764.0	18.0	1.5
4.	Portage	118.0	16.0	793.0	26.0	1.63
5.	Kilbourn, Railroad bridge	138.0	20.0	814.0	24.0	1.2
6.	Sec. 35, T. 15 N., R. 5 E., north line	147.0	9.0	833.0	19.0	2.1
7.	Peterwell bridge, opposite Necedah	174.0	27.0	875.3	42.3	1.57
	Nekoosa dam:		34.0	918.9	43.6	1.28
8.	Below	208.0		936.6	17.7	
9.	Above					
	Port Edwards dam:		4.5	938.5	1.9	.4
10.	Below	212.5		955.5	17.0	
11.	Above					
	South Centralia dam:		1.5	957.3	1.8	1.2
12.	Below	214.0		969.3	12.0	
13.	Above					
	Grand Rapids dam:		2.5	979.8	10.5	4.2
14.	Below	216.5		1,002.0	22.2	
15.	Above					
	Biron dam:		4.0	1,005.5	3.5	.9
16.	Below	220.5		1,016.3	10.8	
17.	Above					
	Lower paper mill south of Stevens Point		12.5	1,032.4	16.1	1.3
18.	Below	233.0		1,044.0	11.6	
19.	Above					
	Upper paper mill south of Stevens Point .....		.5	1,045.5	1.5	3.0
20.	Below	233.5		1,058.8	13.3	
21.	Above					
22.	Stevens Point, Wisconsin Central bridge	236.0	2.5	1,063.8	4.0	1.6
23.	Sec. 23, T. 24 N., R. 7 E.	240.0	4.0	1,075.8	13.0	3.2
24.	Knowlton bridge, Chicago, Milwaukee & St. Paul Ry.	257.0	17.0	1,092.2	19.4	.97
25.	Sec. 8, T. 26 N., R. 7 E.	260.5	3.5	1,097.4	5.2	1.5
26.	Sec. 31, T. 27 N., R. 7 E., south line	264.5	4.0	1,104.0	6.6	1.65
27.	Mosinee rapids, foot, Sec. 29, T. 27 N., R. 7 E., south line	266.0	2.0	1,105.8	1.8	.9
28.	Mosinee dam, above	266.5	.5	1,124.6	18.8	37.6
29.	Black Creek, mouth of	270.5	4.0	1,125.9	1.3	.3
30.	Cedar Creek, mouth of	274.0	3.5	1,130.6	4.7	1.34
31.	Eau Claire River, mouth of	279.0	5.0	1,131.6	8.0	1.6
32.	Rib River, mouth of	280.5	1.5	1,142.8	4.2	2.8
33.	Lower Wausau bridge	283.0	2.5	1,151.0	8.2	3.3
	Wausau dam: .....		.5	1,171.0	20.0	40.0
34.	Below	283.5		1,177.7	6.7	
35.	Above					
	Brokaw dam:		5.5	1,182.7	5.0	.9
36.	Foot	239.0		1,194.7	12.0	
37.	Crest	238.0		1,212.7	18.0	2.0
38.	Pine River, mouth Merrill	304.0	6.0	1,214.7	2.0	.33
39.	Lindore dam, foot			1,277.7	13.0	
40.	Lindore dam, crest	305.0	1.0	1,233.7	6.0	6.0
41.	Upper dam, crest	314.0	9.0	1,245.7	12.0	1.3
42.	Bill Cross rapids, foot	318.0	4.0	1,272.2	26.5	6.6
43.	Grandfather rapids, foot	319.5	1.5	1,361.7	89.5	6.0
44.	1.5 miles above, head	319.5		1,370.7	9.0	5.3
45.	Grandmother rapids, foot	321.2	1.7			

PROFILE OF WISCONSIN RIVER FROM ITS MOUTH TO LAKE VIEUX DESERT.—Continued.

No.	STATION.	DISTANCE.		Elevation above sea level.	DESCENT BETWEEN POINTS.	
		From Mouth.	Between points.		Total.	Per mile.
46.	Gilbert station	miles.	Miles.	Feet.	Feet.	Feet.
	Tomahawk dam:	326.7	5.5	1,409.7	39.0	7.1
47.	Foot	328.7	2.0	1,412.7	3.0	1.5
48.	Crest			1,425.7	13.0	
49.	Nigger Island	344.7	16.0	1,449.4	23.7	1.48
50.	Whirlpool rapids, head	346.7	2.0	1,464.8	15.4	7.7
51.	Hat rapids, foot	351.7	5.0	1,477.4	12.6	2.5
	Rhineland dam:					
52.	Foot	357.7	6.0	1,523.2	45.8	7.6
53.	Crest			1,553.2	30.0	
54.	Otter rapids, head	392.7	35.0	1,570.7	17.5	.5
55.	Sec. 30, T. 41 N., R. 10 E.	402.7	10.0	1,592.7	22.0	2.2
56.	Sec. 6, T. 41 N., R. 10 E.	416.7	14.0	1,644.0	51.3	3.66
57.	Lake Vieux Desert	429.0	12.3	1,650.0	6.0	.5

* L. S. Smith U. S. Geological Survey.

The following table shows the discharge measurements of the Wisconsin River near Necedah, Wis., in 1902, 1903, 1904 and 1905.

DISCHARGE MEASUREMENTS OF WISCONSIN RIVER NEAR NECEDAH, WIS., IN 1902, 1903, 1904 AND 1905.*

Date.	Hydrographer.	Width.	Area of section.	Mean velocity.	Gage height.	D's-charge.	
		Feet.	Square feet.	Feet per second.	Feet.	Second-feet.	
1902.							
December 2.....	L. R. Stockman				4.90	3,875.	
December 23.....	L. R. Stockman.....				5.40	3,534.	
1903.							
January 13†.....	L. R. Stockman.....	280	2,617	1.18	5.65	2,840.	
February 5†.....	L. R. Stockman.....	284	2,360	1.26	5.80	2,585.	
March 5†.....	L. R. Stockman.....	284	2,411	1.09	5.80	2,422.	
March 26.....	Johnson & Stockman		5,405	3.94	11.05	21,280.	
April 2.....	L. R. Stockman.....	220	4,206	2.42	7.55	10,190.	
April 23.....	L. R. Stockman.....	309	3,860	1.84	6.50	7,123.	
June 12.....	L. R. Stockman.....	281	3,282	1.79	6.00	5,888.	
July 7.....	L. R. Stockman.....	316	4,708	4.43	10.50	20,860.	
August 19.....	L. R. Stockman.....	302	2,832	2.46	6.20	6,962.	
September 4.....	L. R. Stockman.....	276	2,463	2.05	5.30	5,047.	
October 12.....	L. R. Stockman.....	314	3,871	3.23	9.43	12,500.	
1904.							
January 12†.....	E. Johnson, jr.	286	2,031	1.33	4.60	3,000.	
May 11.....	E. Johnson, jr.	317	4,685	3.65	9.60	17,110.	
May 23.....	Johnson & Hanna	314	3,717	2.67	7.05	9,921.	
July 16.....	E. Johnson, jr.	294	3,525	1.66	5.80	5,845.	
September 21.....	E. Johnson, jr.	294	1,823	2.08	4.92	3,800.	
October 14.....	F. W. Hanna.....	449	6,216	5.71	13.55	34,420.	
1905.							
April 4.....	S. K. Clapp		5,777	5.07	12.33	29,290	
May 25.....	S. K. Clapp.....		317	4,437	3.23	7.65	13,359.
June 12.....	M. L. Brennon.....		437	6,017	4.90	12.09	50,050.
August 9.....	M. L. Brennon.....		314	3,846	2.4	6.85	9,268

*L. S. Smith; U. S. Geol. Survey. †Frozen. ‡Add to this discharge 3,000 second-feet overflow.

During the first 138 miles from its mouth, the Wisconsin river is entirely devoid of power sites. The first power is found at the Kilbourn Dells where a 15 foot dam is being erected for the generation of electrical power to be transmitted to Madison and other cities. For the next 70 miles the descent is so evenly distributed that no power sites are found until at Nekoosa. In the next $8\frac{1}{2}$ miles above Nekoosa, the river has a descent of 83 feet, nearly all of which is improved by five dams used to furnish power for paper and pulp mills. The first of these dams at Nekoosa develops 4,560 actual horsepower for every twenty-four hours per day. Four and one-half miles further upstream at Port Edwards, 3,860 actual horsepower is developed. Two miles further upstream, there is a dam developing 1,460 horsepower. At Grand Rapids, the dam of the Consolidated Paper & Power Co., furnishes 6,500 horsepower with room for turbines to develop an additional 1,000 horsepower. Four miles above Grand Rapids a dam develops 3,063 horsepower. In the next thirteen miles to Stevens Point there is a fall of 16 feet and only one rapids, the power at which is largely developed by the use of splash boards on the dam below.

In the city of Stevens Point and just south of it, are three developed powers and one undeveloped. One of these dams is located just below the mouth of the Plover river, and develops 1,370 horsepower. One-half mile above this point another dam develops 4,660 horsepower. Above this dam there is an undeveloped power of about seven foot head and owned by the Wisconsin River Paper & Pulp Co. The third dam is located within the Stevens Point city limits and has a head of seven feet. Only three turbines of 140 horsepower have been installed. By building a new dam 1,000 feet below the present one, a head of twelve feet could be obtained, and being located in a city of 9,022 population, offers cheap power to additional factories.

In the next nineteen miles there is a descent of thirty feet, but only one opportunity for power development, namely at Battle Island. Owing to the high banks a dam could be built economically with a head of twenty feet. One of the best and most developed powers on the river is at Mosinee and is owned by the Joseph Dessert Lumber Co. Many years ago a logging dam was maintained here but at

present no use is made of the power. An effort is being made to induce capital to develop the power to its utmost capacity requiring a dam which could develop a head of 207 feet by flooding a small marsh above.

In the next eighteen miles to Wausau the river descends 28 feet. Most of this fall is concentrated in rapids at Rothchilds. A dam could be constructed here which would develop a head of nearly twenty feet but it would have to be a long structure. At Wausau, only a portion of the valuable water power has been developed. There is a long granite island in the center of the stream at this point. At the head of the island, 296 horsepower is developed under a head of $7\frac{1}{2}$ feet but more power could be developed. About 1,000 feet below this dam, a saw mill and a planing mill have installed turbines rated at 1,200 horsepower and operating under heads of nine and eleven feet respectively. A short distance further is located the power site of the Wausau Paper Mills Co., which develops 3,600 horsepower under an average head of fourteen feet. The Wausau Electric Co. has installed turbines rated at 700 horsepower but this can be doubled.

In the twenty miles from Wausau to Merrill the river descends 35 feet. The only portion of this fall at present developed is by a dam at Brokaw where 3,964 horsepower is obtained. Four miles above Brokaw there is an excellent power site where a dam could develop a head of 18 or 20 feet. The banks are over 30 feet high, the river bed is rock, and the channel is 600 feet wide.

There are two dams at Merrill. The first dam develops nearly 2,900 horsepower under a head of fourteen feet. The second dam, which is used for logging purposes only, develops a head of eight feet. A similar dam with an eight foot head and also used for logging purposes, is located about two miles above. These dams are at present of little use, and a company is now being formed to improve these two powers by constructing a new dam with a head of 24 feet.

The next dam above Merrill is at Bill Cross Rapids where a head of 20 or 24 feet could be obtained. About ten miles above Merrill are located the Grandfather Rapids, the largest water power on the river. These rapids extend a distance of one and a half miles, with a descent of nearly 90 feet. The cheapest method of developing this power would be by the con-

struction of three dams of 30 foot each. In the 53 mile stretch between Merrill and Rhinelander, the descent is 277 feet, developing several excellent powers in addition to the above. About one and a half miles above Grandfather Rapids, there are some rapids where a dam of 8.9 feet would back the water to the foot of Grandfather Rapids. Between Tomahawk and Grandmother Rapids the river descends 41 feet, a considerable portion of which is concentrated in a distance of forty rods. Thirty-nine feet could be developed here.

The Tomahawk dam under 13.2 foot head has an installation of 650 horsepower. In the ten miles from the backwater of this dam, the river has an even descent of $23\frac{1}{2}$ feet, 20 feet of which could be developed by one or two dams. North of Tomahawk and extending to the Lincoln county line are the Whirlpool Rapids, where in a distance of two miles the river descends 15.4 feet. Between these rapids and the foot of Hat Rapids, there is a descent of nearly thirteen feet. A dam at the foot of Nigger Island seven miles east of Tomahawk would develop a head of 28 feet. Between the mouth of the Pelican river and the foot of the Hat Rapids, the river descends 22 feet. A dam to develop this power is being constructed with a head of 20.3 feet, the power to be transmitted by electricity to Rhinelander. In the 35 miles from the foot of the dam of the Rhinelander Paper & Pulp Co., the river descends 79.2 feet. This dam develops a head of 30 feet and has installed turbines rated at 3,000 actual horsepower.

Above this point opportunities for developing large powers are few. There are several comparatively small rapids but on the whole the descent is uniform. At Rainbow Rapids a dam could be constructed to develop from six to ten feet. At Otter Rapids there is an old logging dam developing a head of ten feet, but as the rapids descend sixteen feet, a head of this height could be developed.

The principal tributaries of the Wisconsin river are the following: Pelican, Tomahawk, Rib, Eau Claire, Eau Pleine, Yellow, Lemonweir, Baraboo and Kickapoo. Only the last three have as yet been largely developed, but the rapid settlement of the northern regions is creating a strong demand for water powers. In many cases, because of the ease with which they can be developed and controlled, manufacturers often prefer these small powers to the greater ones on the Wisconsin river.

The Black river rises at an elevation of 1,400 feet above the sea level and after a winding course of 140 miles empties into the Mississippi at La Crosse. This river drains a long and narrow watershed, the lower one-third of whose drainage area is a level sandstone region, so that the maximum watershed available for power purposes, at Black River Falls, is only 1,570 square miles. The total descent of the river is 772 feet.

The following tables show the river profile and the discharge measurements.

PROFILE OF BLACK RIVER FROM ITS MOUTH NEAR LA CROSSE TO NEAR WITHEE.*

No.	STATION.	DISTANCE.		Elevation above sea level.	DESCENT BETWEEN POINTS.	
		From mouth.	Between points.		Total.	Per mile.
		Miles.	Miles.	Feet.	Feet.	Feet.
1.	La Crosse (near)			628		
	Black River Falls:					
2.	Below dam	55.0	55.0	749	121	2.2
3.	Above dam	55.0	.0	763	14	
4.	Chicago, St. Paul, Minneapolis and Omaha Railroad bridge	58.0	3.0	766	3	1.0
5.	Halls Creek, mouth of	61.6	3.6	776	10	2.8
6.	Halcyon	67.0	5.4	793	17	3.1
7.	Hatfield railroad bridge	71.2	4.2	833	45	10.4
8.	East Forks, mouth of	74.2	3.0	846	8	2.7
9.	Dells dam, below	77.5	3.3	874	28	8.5
10.	Wedges Creek, mouth of	78.5	1.0	893	19	19.0
11.	Cunningham Creek, mouth of	84.8	6.3	909	16	2.5
12.	Center Sec. 22, T. 24 N., R. 2 W.	86.8	2.0	929	20	10.0
13.	O'Neill Creek, Nellsville	9.8	4.0	989	60	15.0
14.	Bridge, Secs. 9 and 16, T. 25 N., R. 2 W.	98.8	8.0	1,034	45	5.6
15.	Bridge, Secs. 21 and 28, T. 27 N., R. 2 W.	103.5	4.7	1,070	36	7.9
16.	Bridge, Fairchild and North-eastern Ry.	107.8	4.3	1,094	24	5.6
17.	Site New Glenwood dam	109.3	1.5	1,105	11	7.3
18.	Between Secs. 27 and 28, T. 27 N., R. 2 W.	110.3	1.0	1,107	2	2.0
19.	Hemlock dam, 600 feet below	113.5	3.2	1,132	25	8.0
20.	Hemlock dam, above	113.6	.1	1,151	19	
21.	Bridge, Secs. 20 and 28, T. 29 N., R. 2 W.	119.6	6.0	1,167	16	2.7
22.	Bridge Wisconsin Central Ry., west of Withee	125.1	5.5	1,187	20	3.6

*Authority: No. 1 (low-water elevation), Mississippi River Commission; 2 to 22, Joint Survey of Wis. Geol. and Nat. Hist. Survey and United States Geological Survey; Water-Supply and Irrigation Paper No. 156, L. S. Smith.

DISCHARGE MEASUREMENTS OF BLACK RIVER AT NEILLSVILLE,
WIS., IN 1905.*

Date.	Hydrographer,	Width.	Area of section.	Mean velocity.	Gage height.	Discharge.
		Feet.	Square feet.	Feet per second.	Feet.	Second—feet.
April 7	Hanna and Clapp	192	1,021	3.5	7.7	3,279
May 24	S. K. Clapp	165	471	2.18	4.95	1,024
June 13	M. S. Brennon	192	945	3.15	7.26	2,978
July 11	M. S. Brennon	161	392	1.56	4.25	612
Aug. 11	M. S. Brennon	151	242	.93	3.3	225
Sept 25	F. W. Hanna	163	419	1.86	4.35	780

*U. S. Geol. Survey. Water-Supply and Irrigation Paper No. 156.

In the forty miles above Black River Falls the river has worn a channel, the banks of which range from ten to sixty feet in height. The descent in this distance is 337 feet, or nearly 9 feet to the mile. There are many excellent power sites in this stretch, nearly all of which are so situated as to be cheaply developed.

At Black River Falls a dam develops 345 horsepower. This dam which has a head of 16 feet could be improved to develop a head of 20 feet. About $11\frac{1}{2}$ miles below this dam there is a site where a head of seven feet could be developed. Between Black River Falls and Neillsville, owing to the high banks and descent of the river, dams of 15 to 20 feet head could be built every two or three miles. The first dam above Black River Falls is just below the Chicago, St. Paul, Minneapolis and Omaha R. R. bridge, where a head of 30 feet could be developed. Another similar power is located at Halcyon where a 30 foot dam would back the water for three miles. An even better site is available at Hatfield where a head of 50 feet could be obtained which by means of a long canal could be increased to 85 feet. Near the mouth of Wedges Creek a dam could develop a head of 25 feet. In the six miles below Neillsville the river descends 80 feet, 42 feet of which can be developed at Ross Eddy Rapids. About $11\frac{1}{2}$ miles above Neillsville there is a site where in the course of a mile the river descends 21.2 feet. A dam at this place with a crest of 18 feet, by using a canal 600 feet long, would develop a head of 24 feet. A developed power on the upper river, the Hemlock Dam, under a head of twelve feet operates four turbines of 175 horsepower. The branches of the Black River, on account

of their rapid descent, furnish a water power of from 10 to 20 feet at frequent intervals.

The Chippewa River and its tributaries drain an area of 9,573 square miles, of which area 6,000 square miles include the most unsettled portion of Wisconsin and containing its richest forests of timber, both hardwood and pine. The Chippewa drainage system has its source in over a hundred lakes and many swamps near the Michigan boundary, and only twenty miles from Lake Superior. About 112 miles from its mouth at Lake Pepin, the Chippewa river divides, the western branch, the Chippewa, rising south of Lake Superior, and the eastern branch, the Flambeau, having its source near the Michigan line at an elevation of 1,600 feet above the sea. The Flambeau drains 1,983 square miles and the Chippewa, above the junction, drains 1,777 square miles.

The following tables show the profile of the Chippewa River and its discharge measurements:

PROFILE OF CHIPPEWA RIVER FROM ITS MOUTH TO SOURCES OF EAST AND WEST BRANCHES.*—Continued.

No.	STATION.	DISTANCE.			Elevation above sea level.	DESCENT BETWEEN POINTS.	
		From mouth.	Between points,			Total.	Per mile.
		Miles.	Miles	Feet.	Feet.	Feet.	
33.	Blaisdells Lake	170.7	2.5	1,374.5	5.7	2.3	
	Cedar rapids:						
34.	Foot	173.2	2.5	1,404.0	29.5	11.8	
35.	Head	175.7	2.5	1,420.0	16.0	6.4	
36.	Bear Lake	178.2	2.5	1,432.9	12.9	5.1	
37.	River, water level	181.7	3.5	1,442.0	9.1	2.6	
38.	Pelican Lake	186.7	5.0	1,462.0	20.0	4.0	
39.	River, water level, Sec. 19, T. 42 N., R. 2 W.	190.2	3.5	1,462.8	1.8	.5	
40.	Glidden Station	201.7	11.5	1,509.3	45.5	4.0	
41.	Source of river	223.7	22.0				
	West Branch.						
42.	Proposed U. S. dam	164.5	1.8	1,286.0	6.0	3.3	
43.	Pakawang Lake	168.7	6.0	1,287.2	1.2	.2	
	Moose Lake:						
44.	Proposed U. S. dam	178.7	10.0	1,358.8	71.6	1.2	
45.	Water level	178.7	.0	1,361.9	3.1		
46.	Partridge Crop Lake	185.7	7.0	1,384.4	22.5	3.2	
47.	Source of river	205.7	20.0				

*Authority: Nos. 1, Mississippi River Commission; 2-57, U. S. Geol. Survey; 28, David Kirk; 29-47 U. S. Engineers. U. S. Geol. Survey; Water-Supply and Irrigation Paper No. 156.

† High water.

‡ Low water.

DISCHARGE MEASUREMENTS OF CHIPPEWA RIVER AT HIGHWAY BRIDGE, SHAWTOWN, NEAR EAU CLAIRE, WIS., 1904 AND 1905.*

Date.	Hydrographer.	Width.	Area of section.	Mean velocity.	Gage height.	Discharge.
		Feet.	Square feet.	Feet per second.	Feet.	Second-feet.
1904.						
Jan. 11	E. Johnson, Jr.	310	2,429	.99	3.80	2,454
May 14	E. Johnson, Jr.	385	4,272	3.42	8.40	11,610
May 24	Johnson and Hanna.	370	4,074	3.10	7.60	12,630
June 7	E. Johnson, Jr.	426	5,815	4.52	11.25	26,270
July 13	E. Johnson, Jr.	354	3,770	2.10	6.55	7,918
Aug. 28	E. Johnson, Jr.	322	2,766	.82	4.20	2,274
Sept. 19	E. Johnson, Jr.	329	3,122	1.47	5.25	4,581
Oct. 12	F. W. Hanna	495	7,118	5.43	14.80	38,680
Oct. 13	F. W. Hanna	457	6,137	4.76	13.10	29,200
Nov. 29	E. Johnson, Jr.	324	2,847	.80	4.44	2,281
1905.						
May 22	S. K. Clapp	200	4,004	3.66	8.80	16,110
June 14	M. S. Brennan	427	5,131	3.83	10.72	19,665
July 12	M. S. Brennan	355	3,585	2.09	6.55	7,489
Aug. 12	M. S. Brennan	335	3,062	1.29	5.00	3,948

* U. S. Geol. Survey. Water-Supply and Irrigation. Paper No. 156.

† Frozen.

The first dam site on the Chippewa river is located $2\frac{1}{2}$ miles below the mouth of Eau Claire river where a head of seven feet could be obtained, which on account of its proximity to the city of Eau Claire has special value. Two miles above Eau Claire is located the dam of the Dells Paper and Pulp Co., which has a head of 26 feet and could be increased to 32 feet. The turbine installation is 8,246 horsepower. The next dam is at Chippewa Falls where a head of 30 feet is developed and which can be made several feet higher. At Point Creek, $2\frac{1}{2}$ miles above the Chippewa Falls dam, there is a water power where a head of 14 feet could be obtained and the dam could be very economically constructed, material for construction being abundant. At Eagle Rapids, $4\frac{1}{2}$ miles further upstream, there is a site for a 20 foot dam. One mile above the mouth of O'Neills Creek, a 25 foot dam would develop 5,000 theoretical horsepower.

The best opportunity for power development on the Chippewa river is at Jim Falls. A 28 foot dam is being constructed here, which, by means of a long canal, will develop a head of 55 feet. Another excellent site and one which can be cheaply developed is at Burnett Falls. A 35 foot dam could be erected here. The next power is located at Helcombe where an old timber dam develops a head of 17 feet. This dam is

decaying and should be replaced by a new 18 foot dam and another 15 foot dam at Little Falls. Between Holcombe and the mouth of the Flambeau the river descends 14 feet, 10 feet of which is concentrated in the first mile below the latter point. A dam could be constructed to develop 15 foot head.

All the powers on Chippewa river are reached by one or more railroads and consequently will soon be developed. The importance of this series of powers is emphasized by the following statement from the United States Geological Survey bulletin on Wisconsin Water powers: "Of the 244 feet descent in the Chippewa between Chippewa Falls and the mouth of the Flambeau, 116 feet are concentrated in five falls and rapids. The building of ten dams would economically develop a total of 213 feet head in this distance of 43 miles. When fully developed these powers will rival in importance the extensive developments on lower Fox River between Appleton and Green Bay."

The principal tributaries of the Chippewa are the Flambeau, the Red Cedar, the Yellow, the Jump and the East and West Branches of the Chippewa. On all of these rivers there are excellent sites which can be reasonably developed and have immense reservoir areas.

The Flambeau River is the largest tributary and flows through unlimited quantities of pulp-wood which mark this river as a center for the manufacture of paper and pulp. Railroad facilities are at present lacking but several of the large railway systems are near and can easily extend their lines. This river has its source in a large number of lakes at an altitude of 960 feet above the sea, and descends 570 feet in a distance of 150 miles, much of the descent is concentrated in numerous falls and rapids.

The following tables show the profile of the river and its discharge measurements:

PROFILE OF FLAMBEAU RIVER FROM ITS MOUTH TO BOULDER LAKE.*

No.	Station	DISTANCE.		Elevation above sea level.	DESCENT BETWEEN POINTS.	
		From mouth.	Between points.		Total.	Per mile.
		Miles.	Miles	Feet.	Feet.	Feet.
1.	Mouth of river	0.0	.....	1,050.0	.....	.....
2.	SW. ¼ Sec. 34, T. 34 N., R. 7 W.	7.0	7.0	1,064.0	14.0	2.0
3.	Ducommun rapids, NW. ¼ Sec. 23, T. 34 N., R. 7 W.	11.0	4.0	1,070.0	6.0	1.5
4.	New dam, foot of rapids	15.0	4.0	1,081.0	11.0	2.7
5.	SW. ¼ Sec. 1, T. 34 N., R. 6 W.	15.75	.75	1,081.4	7.4	10.0
6.	Ladysmith, below dam	24.25	8.5	1,099.0	10.6	1.25
7.	Ladysmith, above dam	24.25	0.0	1,115.3	16.3	.....
8.	NW. ¼ Sec. 25, T. 35 N., R. 6 W.	28.0	3.75	1,115.4	.1	.....
9.	Little Falls, foot of	32.0	4.0	1,131.4	16.0	4.0
10.	Little Falls, head of (Sec. 21, T. 35 N., R. 5 W.	32.8	.8	1,147.4	16.0	20.0
11.	NE. ¼ Sec. 15, T. 35 N., R. 5 W.	36.8	4.0	1,166.7	19.3	4.8
12.	Big Falls, foot of NW. ¼ Sec. 2, T. 35 N., R. 5 W.	40.3	3.5	1,177.0	10.3	*3.0
13.	NW. ¼ Sec. 8, T. 39 N., R. 1 W.	86.2	45.9	1,421.8	244.8	5.3
14.	South line, Sec. 33, T. 40 N., R. 1 W.	91.2	5.0	1,429.6	7.8	1.5
16.	Below dam, Sec. 25, T. 40 N., R. 1 W., west line of	95.0	54.7	1,454.0	.....	.....
17.	Above dam	95.0	0.0	1,470.0	.....	.....
18.	Park Falls, railroad bridge, west line, Sec. 24, T. 40 N., R. 1 W.	96.6	1.6	1,470.0	.....	.....
19.	Below tail race upper dam, Park Falls	99.3	.5	1,466.8	2.8	5.6
20.	Above upper dam, Park Falls..	98.5	.2	1,481.0	14.2	.....
21.	Backwater, upper dam	104.3	5.8	1,482.5	1.5	.2
22.	Center Sec. 28, T. 41 N., R. 1 E.	107.1	2.8	1,499.2	16.7	6.0
23.	Sec. 12, T. 41 N., R. 1 E. W. ¼ stake	112.5	5.4	1,510.8	11.6	2.0
24.	Sec. 4, T. 41 N., R. 2 E., W. ¼ stake	115.8	3.3	1,516.0	6.2	1.8
25.	Turtle River, mouth.....	119.0	3.2	1,541.4	25.4	7.6
26.	Manitowish River, junction of Bear Creek	134.0	15.0	1,568.0	26.6	1.8
27.	Rest Lake, mouth of (Sec. 8, T. 42 N., R. 5 E.	146.0	12.0	1,587.0	19.0	1.6
28.	Island Lake, inlet of	153.5	7.5	1,592.0	5.0	.66
29.	Boulder Lake	163.0	9.5	1,625.0	33.0	3.5

* Authority: Nos. 1-26, U. S. Geol. Survey; 27-30, U. S. Engineers. Because of an error in the assigned elevation of the initial bench mark, 15 feet is added to the U. S. Engineer elevation to correct to sea level datum.

DISCHARGE MEASUREMENTS OF FLAMBEAU RIVER NEAR LADYSMITH,
WIS., FOR 1904 AND 1905.

Date.	Hydrographer.	Width.	Area of section.	Mean velocity.	Gage height.	Discharge.
		Feet.	Square feet.	Feet per second.	Feet.	Second-feet.
1904.						
May 16.	E. Johnson, jr.	350	1,333	3.15	17.88	4,203
June 3.	E. Johnson, jr.	350	1,448	2.99	17.45	4,321
August 29.	E. Johnson, jr.	349	733	2.07	16.06	1,517
September 20.	E. Johnson, jr.	343	702	2.21	16.01	1,554
October 12.	F. W. Hanna.	364	1,653	3.37	18.58	5,588
1905.						
April 8.	S. K. Clapp.	129	1,537	3.49	18.27	5,367
May 23.	S. K. Clapp.	357	1,292	2.69	17.60	3,474
June 14.	M. S. Brennan.	354	1,232	2.67	17.35	3,288
July 12.	M. S. Brennan.	353	1,015	2.54	16.89	2,576
August 12.	M. S. Brennan.	315	623	1.84	15.66	1,144
September 23.	F. W. Hanna.	353	1,404	3.02	17.75	4,236

U. S. Geol. Survey; Water-Supply and Irrigation Paper No. 156.

In the 19 miles between the mouth of the river and Ladysmith, the river descends 42 feet. Six miles below Ladysmith there is a developed power with a head of 16 feet. In the 70 miles above Ladysmith there are no developed powers but the descent of 353 feet in that distance insures many undeveloped powers. At Little Falls a 15 foot dam would give a head of 25 feet and at Big Falls, a 25 foot dam together with a canal about five-eighths mile long would develop a head of 60 feet. At Park Falls there are two dams each of 16 foot head. At one there is a turbine installation of 1,300 horsepower while at the other the installation is 1,100 horsepower. Above Park Falls there are several falls of from 20 to 25 feet insuring excellent water powers.

The Red Cedar River has a descent of 470 feet in its length of 90 miles, giving opportunity for many water powers. The drainage area is 1,957 square miles. The following table shows the profile of the river:

PROFILE OF RED CEDAR RIVER FROM ITS MOUTH TO RED CEDAR LAKE.*

No.	Station.	DISTANCE.		Elevation above sea level.	DESCENT BE- TWEEN POINTS.	
		From mouth.	Between points.		Total.	Per mile.
		Miles.	Miles.	Feet.	Feet.	Feet.
1.	Mouth of river .....	.0	.....	705.0	.....	.....
2.	Dunnville	2.0	2.0	734.4	18.4	9.2
	Downsville dam:					
3.	Foot	7.8	5.8	739.0	15.6	2.7
4.	Crest	17.8	.0	758.2	19.2	3.1
5.	Irving	13.0	5.2	766.4	8.2	
	Menomonie dam:					
6.	Foot	16.6	3.6	788.3	21.9	8.0
7.	Crest	16.6	.0	803.9	15.6	
8.	"Omaha" bridge'	18.9	2.3	806.7	2.8	3.7
	Cedar Rapids dam:					
9.	Foot	23.4	4.5	823.3	16.6	5.3
10.	Crest	23.4	.0	842.0	18.7	
11.	Hay River, mouth.....	30.2	6.8	859.3	17.3	7.4
12.	Colfax	35.0	4.8	895.0	35.7	
13.	Cameron (2miles west)	70.0	35.0	1,068.0	173.0	5.0
14.	Railroad crossing	74.0	4.0	1,116.0	48.0	12.0
15.	Cedar Lake dam, Sec. 22, T. 37 N., R. 10 W.	90.0	16.0	1,191.0	75.0	4.7
16.	Dam in Sec. 25, T. 37 N., R. 10 W.	96.0	6.0	.....	.....	.....

* Authority: No. 1, Chicago, Milwaukee and St. Paul Railway; 2-11, O'Keef & Orbison, Appleton, Wis., 12, Wisconsin Central Railway; 13, Minneapolis, St. Paul, and Sault Ste. Marie Railway; 14 and 15, Chicago, St. Paul, Minneapolis and Omaha Railway.

In the first thirty miles above the river mouth, six powers could be developed. These powers are as follows: a dam with a head of 15.6 feet at Dunnville would develop 1,685 horsepower; raising the present dam at Dunnville four feet would give a head of 23.2 feet and an estimated 2,480 horsepower; the construction of a dam at Irving with a head of 21.9 feet would give 2,260 horsepower; raising the present dam at Menomonie 2.8 feet would give 1,800 horsepower; a new dam 2.8 miles above Menomonie would yield 1,700 horsepower; and raising the present dam at Cedar Rapids 21.3 feet, giving a total head of 40 feet, would give 3,800 horsepower. The Wisconsin Power Co., of Chicago has recently acquired a large number of water powers on this river, ranging from 7 to 19 feet. Owing to the fact that these powers are located in a well settled region and accessible by one or more railroads, their development at an early date is certain.

On the Eau Claire river there are many power opportunities. Near the river mouth there is a dam with a head of 11 feet. About one-half mile further upstream another dam develops a head of 13½ feet. There are a number of logging dams with heads ranging from 7 to 20 feet but the power thus developed is not utilized.

The Jump river has a descent of 500 feet in its length of 65 miles. At one place the river falls 35 feet and there are many other sites where dams would develop heads of from 15 to 20 feet. All these powers are undeveloped.

The Chippewa river has many other tributaries, which because of their high banks and rapid currents afford many water powers that can be developed at a small cost.

The St. Croix river has its source in St. Croix Lake at an elevation of 1,010 feet, and only twenty miles from Lake Superior. In its total length of 168 miles it descends 344 feet, all but 20 feet of which is in the upper 116 miles. The total drainage area is 7,576 square miles. The following tables show the river profile and its discharge measurements:

PROFILE OF ST. CROIX RIVER FROM ITS MOUTH TO ST. CROIX LAKE.

No.	Station.	DISTANCE.		E'levation above sea level.	DESCENT BETWEEN POINTS.	
		From mouth.	Between points.		Per mile.	Total.
		Miles.	Miles,	Feet.	Feet.	Feet.
	Prescott, mouth of river.....	0.0	.....	*667.0	.....	.....
	Kinnikinnic River, mouth.....	5.0	5.0	668.0	1.0	0.2
	Apple River, mouth.....	28.0	23.0	672.0	4.0	.2
	Osceola.....	42.0	14.0	683.0	11.0	.8
	St. Croix Falls, (head of navigation).....	48.0	6.0	687.0	4.0	.7
	Trade River, mouth.....	60.0	12.0	753.0	6.6	5.5
	Sunrise River, mouth.....	65.0	5.0	758.5	5.5	1.1
	Rush City, ferry.....	75.0	10.0	773.0	14.5	1.4
	Sec. 25, T. 38 N., R. 20 W.	79.0	4.0	772.0	9.0	2.2
	Snake River, mouth.....	86.0	7.0	790.0	8.0	1.1
	Kettle River, rapids, foot.....	89.0	3.0	891.0	11.0	3.7
	Kettle River, mouth.....	90.0	1.0	816.0	15.0	15.0
	Kettle River, rapids, head (pro- posed U. S. dam, Sec. 2, T. 39 N., R. 19 W.).....	93.0	3.0	850.0	34.0	11.3
	Clam River, mouth.....	101.0	8.0	864.0	18.0	2.2
	Sec. 1, T. 40 N., R. 18 W.	108.5	2.5	874.0	6.0	2.4
	Yellow River, mouth.....	115.0	11.5	888.0	14.0	1.2
	Namekagon River, mouth.....	127.0	12.0	908.0	20.0	1.7
	Moose River, mouth.....	139.0	12.0	1,001.0	93.0	7.7
	Sec. 25, T. 44 N., R. 13 W: Below dam.....	144.0	5.0	1,001.5	.5	.1
	Above dam.....	144.0	.0	1,005.3	3.8	.....
	St. Croix Lake.....	160.0	16.0	1,010.0	4.7	.3

* Low-water elevation.



PRICE COUNTY CORN.

DISCHARGE MEASTREMENTS OF ST. CROIX RIVER NEAR ST. CROIX FALSLS,
WIS., 1903.*

Date.	Hydrographer.	Gage height.	Discharge.
1903.		feet.	Second-feet.
May 22	E. Johnson, Jr.	4.00	10,747
August 11	W. R. Hoag.	2.70	7,470
October 9	L. R. Stockham.	3.94	10,244

* U. S. Geol. Survey—Water-Supply and Irrigation Paper No. 156.

Below Taylor Falls there are few good dam sites on this river, but above this place excellent undeveloped powers are numerous. In the twelve miles from the mouth of the Namekagon to the Yellow river, the total fall is 20 feet concentrated largely in several rapids making excellent power sites. The St. Croix rapids afford fine opportunities, there being a fall of 55 feet in six miles. With the yearly average flow, a dam under a head of 40 feet which is practicable here, would develop 23,021 theoretical horsepower. The Kettle river rapids are next to the St. Croix rapids, the most prominent on the river. They extend for four miles during which there is a descent of 49 feet. Several dams could be built here. Above the mouth of the Kettle river, a head of ten feet would develop 1,280 theoretical horsepower with the ordinary low-water flow, and below the entrance of the Kettle river 1,737 theoretical horsepower under the same conditions of flow. Between the Snake river and St. Croix rapids there are the following rapids: the Otter Slide, the ordinary low-water power of which under a head of ten feet is 2,140 theoretical horsepower; the Horse Race rapids; the Baltimore rapids, the ordinary low-water power of which under a head of ten feet is 2,220 theoretical horsepower; the Upper Big Rock rapids, and the Yellow Pine rapids. There are many other opportunities for power development on the St. Croix River.

The leading tributaries of the St. Croix are the Yellow, Clam, Eau Claire, Apple, and Namekagon rivers.

The Yellow river has a descent of 197 feet in its length of 50 miles, the gradient being such that rapids occur at frequent intervals. The flow is very constant. Near the mouth of the river a dam with a head of 25 feet could be constructed.

Another dam could be erected a mile above Yellow Lake which would develop a head of twenty feet. The river profile shows several places where the descent is from 8 to 10 feet per mile. There are four important logging dams on this river ranging from 7.5 to 18 feet head.

The Apple river drains 427 square miles, having its source in a large number of lakes which increase its summer flow and steady the discharge. There are many good power sites on this river, some of which have been developed for manufacturing purposes or for electric lighting but most of them are still undeveloped. There are a large number of old logging dams with heads of from 6 to 20 feet, but they are in poor condition.

On the Willow river, owing to its rapid descent of 213 feet in 35 miles, there are many fine power opportunities. There are at least nine such powers of over ten feet head, at one place it being possible to construct a dam with a head of 71 feet, which by means of a canal could be increased to a head of 105 feet.

The Clam river drains an area of 416 square miles and has a total descent of 350 feet in its length of 50 miles, offering several good power opportunities. At one place, owing to a series of rapids, several dams can be constructed quite near together developing heads of from 20 to 35 feet each, or a single dam and a canal would develop a head of 100 feet. At Clam Falls a dam with a 34 foot head could be erected.

On the Namekagon river, 4 miles from the mouth, a head of 20 feet could be developed, and 1,000 horsepower produced. A power dam has been erected at Hayward to be used for electric lighting and develops 200 horsepower. There are many stretches in this river where the descent is from 8 to over 10 feet per mile.

On the Totogatic river, which descends 350 feet in 55 miles, there are many logging dams and several other good power sites. The Osceola Creek and the Kinnikinnic river furnish a large number of small water powers. The descent of these rivers is very rapid.

The Wisconsin rivers belonging to the Lake Superior drainage system rarely exceed 30 miles in length and owing to their descent of from 400 to 1,000 feet within this distance are exceedingly rapid, alternating between small streams and tor-

rential rivers. Reservoir construction is especially valuable in this part of the state to conserve the rainfall and thus to equalize the flow.

One of the finest water powers in the northwest is on the St. Louis river and is at present being developed. This river in a distance of six miles descends 456 feet in a series of rapids and falls. A steel gravity dam 36 feet high has been constructed at Thompson which stores the water in a reservoir one square mile in area from which the water is lead through a canal $2\frac{1}{2}$ miles in length. The water is taken from the canal by iron pipes for a distance of one mile and delivered at the power house under a head of 365 feet. The capacity of the canal is sufficient to develop 100,000 horsepower. Turbines similar to those in use at Niagara Falls have been installed.

The Black river, a tributary of the Nemadji river, has an extremely rapid descent flowing over many high falls. At one place a head of 160 feet could be developed, producing 560 theoretical horsepower.

The Boise, Brule, White, Montreal, Gogoshungun, Maringouin and Bad rivers all have very steep gradients and offer power sites which will produce from 500 to 2,000 horsepower.

CHAPTER IV.

The purpose of this inquiry is set forth in the preface, and in the opening paragraph of the schedule (reprinted below) sent out to secretaries of various business men's organizations, editors of newspapers, city and village officials and others whose names had been mentioned as men interested in the upbuilding of their respective communities. This schedule, as printed in full below, was mailed to every incorporated village in the state and to every unincorporated village having a probable population of 300 or more, making a total of 589 cities and villages. Most of them responded to the first call while others required a second, and even a third call before any response was received, while from others no response could be obtained.

SCHEDULE.

Dear Sir:—

This bureau is endeavoring to make an investigation as to the industrial possibilities of Wisconsin from an agricultural, manufacturing and commercial point of view and we hope to be able to publish the results of such investigation in our next biennial report. Capital is continually on the lookout for opportunities for investment and should your locality offer favorable inducements in the way of raw material, shipping facilities, site donations, water power, etc., it may be the means of attracting some much needed industry which will afford employment for the unemployed, and add to the population and wealth of your community and to the state.

With this end in view, will you kindly co-operate with us in answering the following questions and return this blank at your earliest convenience.

- City or village of....., county of.....
1. How much land have you suitable for manufacturing or business purposes?..... How far is it located from the nearest railroad station?.....
 2. Have you a supply of water power?..... What is the estimated horse power not yet utilized?..... Kind of fuel used?..... From where obtained?.....
 3. Would your city (or village) furnish site in case new manufacturing were put in?..... Would your city (or village) offer any other inducements to secure new factories or other industries?.....
 4. Could a canning factory, should one be located in your city (or village), be supplied with such raw materials as fruit?..... vegetables?..... fish?..... any other?.....
 5. Can your city (or village) be supplied with clay, sand, peat, timber, iron, stone, zinc, lead, or other natural products?.....
 6. Can help be secured in your city (or village) or adjacent country?..... Number of men..... women..... young persons.....
 7. Give names of railroads in your city (or village), and state whether there are good facilities for the receipt and shipment of freight..... If not located on a railroad give name of, and distance to, nearest railroad.....
 8. What kind of business would, in your opinion, be best suited to your city (or village)?.....
 9. Have you a good water supply for household purposes?..... Manufacturing purposes?.....
 10. Is your city (or village) supplied with a gas plant?..... Electric light plant?..... Telephone system?.....
 11. Have you electric railways connecting your city (or village) with other cities or villages?.....
 12. Give number of banks located in your city (or village)..... Drug stores..... Groceries..... Hardware..... Department stores..... Dry goods stores..... Laundries..... Number and kinds of other mercantile establishments, factories, etc.

13. If your village is not incorporated give estimated population.
.....
14. Are there any factories or workshops in your city (or vil-
lage) that are idle—if so, state kind of business last car-
ried on in each such factory or workshop and cause of
idleness
.....
15. Give number and kinds of manufacturing industries once
established in your city (or village) that have failed, and
state reasons for such failure.....
.....
16. Give number of physicians....., lawyers....., teach-
ers employed.....
17. Is your city (or village) a summer resort?..... If
not, can it be made one?..... Give number and
capacity of hotels..... Boarding houses
..... Are you in need of a first-class
hotel?.....
18. Is the country surrounding your city (or village) good for
farming purposes?..... What portion of
such farming lands suitable for crop raising is improved?
.....
19. Give character of the soil in the country surrounding your
city (or village) stating what portion is rough.....
level but stony....., swampy....., sandy
....., level and free from stone.....
20. Give brief description of your city (or village) as to streets,
shade trees, parks, public buildings, lakes, etc.
.....
.....

After receiving 486 replies to this schedule, another was mailed to the various registers of deeds relative to the prevailing prices of real estate in the various counties. Wisconsin annually loses a great many people in the hope that cheaper land can be secured in other states. The returns from these inquiries indicate that farm lands in this state are yet to be purchased at as low a price as in almost any state in the union, and when climate and fertility of the soil are considered, the opportunities for securing good, cheap homes in this state are perhaps not surpassed in the United States.

In all cities and villages reporting there was an abundance of land adjoining the railroad and well suited for factory locations. In many cities the land is so located as to admit of shipments over two railroads. Nearly all cities reported that they would grant free sites to secure the location of substantial business concerns. In some cities bounties and other inducements will be offered. In every city and village reporting there is an abundant supply of good water for both manufacturing and domestic purposes.

In the following pages the various counties are taken up alphabetically and discussed from the point of view of the soil, amount of improved and unimproved lands, prices of real estate, population, products, timber and other natural resources, dairying and other industries. Following the discussion of each county each city and village within the county is arranged alphabetically and treated according to the information obtained in the schedule sent out.

ADAMS COUNTY.

Adams county is located in the central part of the state on the Wisconsin river. The area is 682 square miles, with a population in 1905 of 9,062, of which number 7,702 were native born. The foreign element is mainly German and Norwegian. It is a purely agricultural county with no cities over 1,000 population. It is also the only county in the state having no railroad transportation. The farm area in 1905 was 306,849 acres, about 73% of the county, of which amount only 122,383 acres were improved land. These farms, together with improvements, were valued at \$4,852,373. In 1890 the farm area was 215,777 acres, which, including improvements was valued at \$2,237,930. The larger portion of the county presents the character of a level plain, which has a surface of loose sand, but showing many marshes, some of very large size, and occasionally prairies. Except on the marshes and on some of the small prairies, the plain is generally covered with a growth of stunted oaks, with some jack pine in the northern part. Away from the Wisconsin river the land rises to a considerable altitude, gradually to the north, but more rapid in the eastern direction. Dotting the plain and rising abruptly from its most level portions, are isolated mounds

and peaks of rocks several hundred feet in height. The soil is coarse, open in texture and very light, though not uniformly so. This light land is not well suited to general farming and must be turned to use along special rather than general lines. The land is not naturally adapted to grasses and grains, and only by means of irrigation can it be made remunerative along dairy lines. Potatoes and vegetables of excellent quality can be produced. Much of this land is well suited to sheep raising. The principal crops and their acreage in 1890 and 1905 were as follows:

	Acreage in 1890.	Acreage in 1905.
Hay	17,458	20,049
Corn	13,459	21,063
Oats	9,178	10,161
Rye	16,727	19,309
Wheat	2,923	1,390
Potatoes	2,003	9,624

There are three cheese factories and seven creameries in the county. The price of unimproved land ranges from \$5 to \$15 per acre, while for improved land the price ranges from \$20 to \$50 per acre. The county seat is Friendship. The population of the local political divisions for 1905 was as follows:

ADAMS COUNTY.

TOWNS, CITIES AND VILLAGES.	Families.	AGGREGATE POPULATION.			COLOR.			Ex-soldiers and sailors.	Militia.
		Male.	Female.	Total.	White.	Colored.	Indians.		
Adams	155	314	335	649	649	.....	16	113
Big Flats	109	282	243	525	525	.....	5	88
Colburn	92	222	176	398	398	.....	6	47
Dell Prairie	130	292	262	554	554	.....	9	105
Easton	123	251	244	495	495	.....	18	66
Jackson	121	294	275	569	569	.....	12	107
Lincoln	113	282	264	546	546	.....	5	107
Leola	80	203	161	364	364	.....	3	72
Monroe	120	298	273	571	571	.....	11	104
New Chester	82	188	180	368	368	.....	7	68
New Haven	149	365	315	680	680	.....	9	135
Preston	81	188	187	375	344	31	4	68	
Quincy	93	254	240	494	494	.....	2	69
Richfield	93	241	202	443	443	.....	6	53
Rome	118	302	239	541	541	.....	4	82
Springville	128	299	254	553	547	6	7	110	
Strongs Prairie	187	507	430	937	933	4	3	166	
Total	1,974	4,782	4,280	9,062	9,021	6 35	127	1,590	

FRIENDSHIP.

Village of Friendship, Adams Co. Population, 350. Located in the central part of Adams county, of which it is the county seat; 18 miles from Necedah, the nearest railway station and banking point; 120 miles from Milwaukee; 112 miles from La Crosse and 205 miles from Chicago. Has stage connections with Necedah, Coloma, Quincy and Kilbourn. Telephone system.

This village has 1 drug store, 1 grocery, 1 hardware and 1 dry goods store. Has a graded school employing 3 teachers; has 1 physician and 2 lawyers; 2 hotels able to accommodate 75 people, and 3 boarding houses. Has a grist mill and two weekly newspapers.

In this village there is a small undeveloped water power. Wood is used for fuel secured from adjacent country. A small amount of help could be secured in the vicinity. Vegetables could be supplied for a canning factory and the village can be supplied with clay, stone, sand and timber.

The country surrounding the village is suitable for farming. About 50% of the land is improved. The surface is mostly level and soil free from stone. A small portion is swampy and a large per cent is sandy.

ASHLAND COUNTY.

Ashland county is located in the northern part of the state on the shore of Lake Superior. The area is 930 square miles. The population in 1905 was 23,935, a gain of 3,759 since 1900. Nearly one-third of the population is foreign born, the principal nationalities represented and their order of importance are as follows: Germans, Canadians, Swedes and Norwegians. It contains vast areas from which the timber has been cleared but which have not yet been occupied for agricultural purposes. Only about 81,000 acres have been settled for farming, of which not over 20,000 acres are improved. The cash value of the farms with their improvements in 1905, was \$1,456,314. Nearly all of this improvement has been made since 1890, when there were only 3,684 acres of improved farm land in the county, valued at less than \$250,000. Covering the entire northern third of the county and all of the Apostle Islands, the soil is a red marly clay. In places this clay is mixed with enough sand to make it good for agricultural purposes, but generally it is purely clayey and tenacious and bakes so hard under the sun that it is not nearly so valuable as the land further south, and only by thorough work-

ing can it be made gradually available. In the central part of the county the soil is a loamy clay of an excellent quality generally free from stones supporting a heavy growth of hardwood. This soil is especially adapted to generally farming and is destined to support an important dairy stock-raising industry. In the southern part of this area there is considerable swamp and wet lands, covered by a growth of tamarack and cedar. In the southern part of the county the soil is a clayey loam with a more or less rolling surface so common in northern Wisconsin. This soil is well adapted to pasturage and sheep-raising. The staple products of the county are oats and hay, the acreage devoted to each being 2,000 and 9,574 acres respectfully. There are three cheese factories and two creameries in the county. For unimproved tillable land the price ranges from \$7.50 to \$15 per acre; and for improved land, from \$20 to \$35 per acre, the price depending upon the nature of the soil and its proximity to railroads and markets. A large part of the northern half of the county is occupied by the La Pointe Indian Reservation. Ashland is the principal city and county seat. The population of the local political units for 1905 was as follows:

ASHLAND COUNTY.

TOWNS, CITIES AND VILLAGES.	Families.	AGGREGATE POPULATION.			COLOR.			Ex-soldiers and sailors.	Militia.
		Male.	Female.	Total.	White.	Colored.	Indians.		
Agenda	116	359	253	612	612	.....	.....	3	124
Ashland	146	411	342	753	737	.....	16	4	86
Ashland, city:									
ward 1	339	1,353	697	2,050	2,047	*3	.....	.....	.....
ward 2	318	811	745	1,556	1,556	.....	.....	.....	.....
ward 3	268	722	675	1,397	1,396	.....	1	.....	.....
ward 4	178	514	434	948	948	.....	.....	.....	.....
ward 5	222	780	549	1,329	1,329	.....	.....	.....	.....
ward 6	346	855	828	1,683	1,680	.....	3	.....	.....
ward 7	258	638	593	1,231	1,231	.....	.....	.....	.....
ward 8	217	692	616	1,308	1,303	.....	.....	.....	.....
ward 9	221	778	568	1,346	1,346	.....	.....	.....	.....
ward 10	319	934	737	1,671	1,671	.....	.....	.....	.....
Total, city..14,519	.....	.....	.....	.....	.....	.....	.....	35	3,774
Butternut	105	371	229	600	600	.....	.....	3	162
Butternut, village	137	369	338	707	707	.....	.....	4	145
Gordon	73	189	144	333	333	.....	.....	1	61
Jacobs	165	999	814	1,813	1,812	.....	1	.....	374
La Pointe	51	105	78	183	142	.....	41	.....	25
Morse	279	1,069	642	1,711	1,711	.....	.....	4	547
Sanborn	480	1,588	1,116	2,704	1,751	.....	†553	4	633
Total	4,238	13,537	10,398	23,935	22,917	7	1011	62	5,931

*3 Chinamen. †Indians, not taxed.

ASHLAND.

County seat of Ashland county. Incorporated city; population, 14,519; Railroads, Northern Pacific; Wisconsin Central; Chicago & Northwestern; Chicago, St. Paul, Minneapolis & Omaha. Boat line to Washburn, Duluth, Bayfield and Chicago. Adams and National Express; telegraph and telephone; excellent freight and passenger facilities; six miles of street railway.

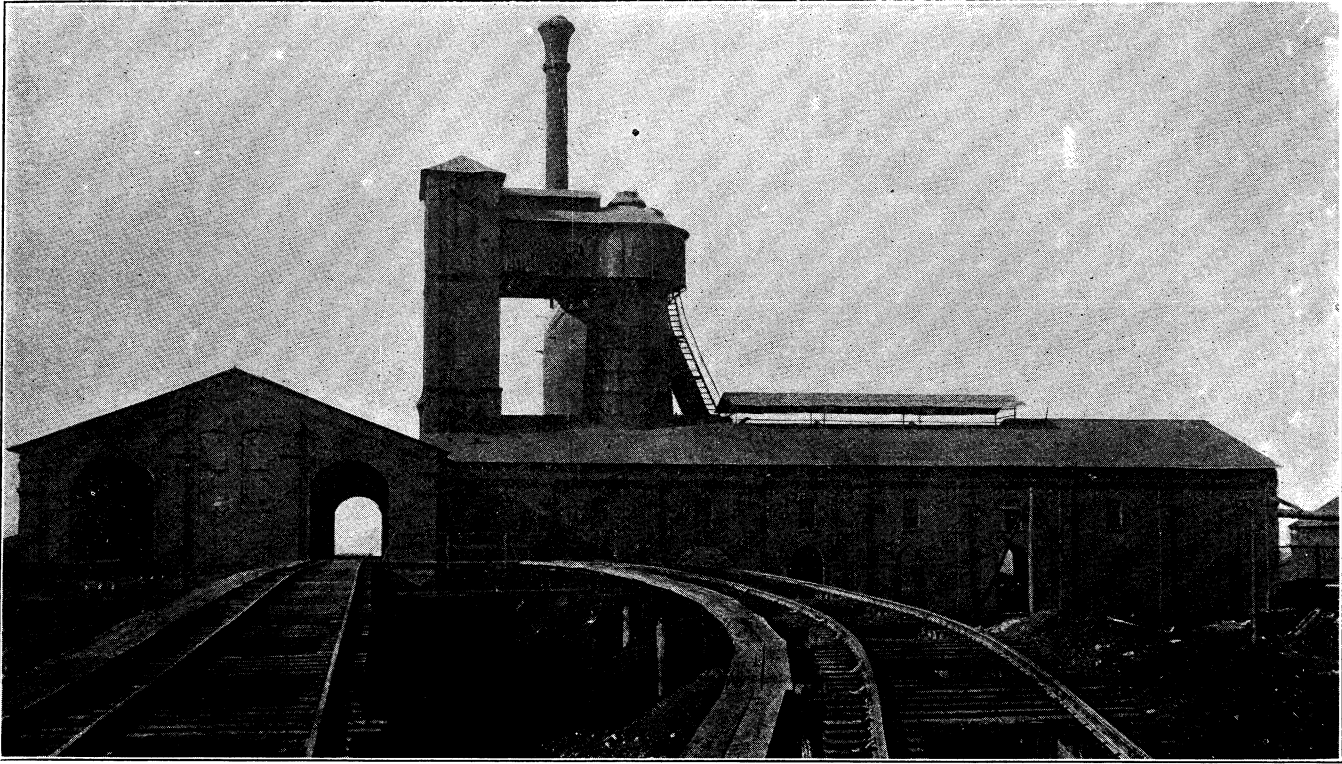
This city has six miles of paved streets. Twenty-five and one-half miles of water mains. Sewerage system. Lighted by electricity and gas. One academy, 30 pupils. 13 public schools, 2,000 pupils. 10 churches, Presbyterian, Congregational, Methodist, Catholic, Episcopal, Hebrew, Polish, Swedish, Norwegian. 4 weekly and 2 daily papers. Public library, 4,000 volumes. 5 public halls, seating capacity 3,000. 6 factories—stave, cigar, sash, door, and novelty works; 300 employes. 7 saw mills, 1,400 employes. 9 lumber yards, 3 implement dealers, 4 livery barns, 12 meat markets, 25 groceries, 6 blacksmiths, 10 jewelers, 25 lawyers, 7 drug stores, 3 banks, 3 coal yards, 8 hotels, 4 general stores, 3 bakeries, 10 dry goods stores, 5 flour and feed stores, 5 real estate dealers, 15 doctors, blast furnace, iron works, foundry, ore shipping docks. Surrounding country timber land. Prevailing nationality, Americans. Assessed valuation personal property, \$2,562,744. Assessed valuation real estate, \$5,101,743. Total tax levy for municipal purposes, 12 mills. All kinds of wood, iron ore and stone tributary. Opening for almost any manufacturing business using wood or iron.

BUTTERNUT.

Butternut, Ashland Co., Population, 707. An incorporated village located in the southern part of the county on the W. C. Ry., 43 miles from Ashland, the county seat; 124 miles from Superior, 193 miles from St. Paul and 295 miles from Milwaukee. National Express; telegraph and telephone connections. Good shipping facilities and passenger service.

The village has good streets, nice shade trees, a public park, a bank, drug store and five general stores, three hotels, three boarding houses, graded public school employing six teachers, two physicians, village hall, saw mills, a stave and heading mill, shingle mill, veneer factory, wagon and carriage shops and a creamery. A weekly newspaper is published.

Steam power is used. Wood is used for fuel obtained from the surrounding country. The village can be supplied with plenty of clay, sand, stone and timber from the adjacent country. Only a limited amount of help can be secured here as a great many are already employed. Good location for woodenware factory.



The surrounding country is suitable for agricultural purposes and about one-eighth of the land is improved farms. There is not much rough land but about 75 per cent is stony and 5 per cent swampy. The soil is fertile and responds quickly under cultivation.

GLIDDEN.

Glidden, Ashland Co. Population, 900. An unincorporated village located on the W. C. Ry., in the southern part of the county, 43 miles from Ashland, the county seat; 120 miles from Superior; 209 miles from St. Paul, and 300 miles from Milwaukee. Express National; has telegraph and telephone connections. Good shipping facilities and passenger service.

The village is a summer resort of some importance, has a fine public park, village hall, a bank, a drug store, six general merchandise and two hardware stores, one hotel, graded public school employing seven teachers, Catholic and Lutheran churches, two physicians, one lawyer, saw mill, veneer mill and a shingle mill. Two weekly newspapers are published.

Help can be secured in the village and adjacent country. Wood is used for fuel obtained from surrounding country. Coal can be had at the docks at Ashland or Superior. There is also an undeveloped water power estimated at 1,500-horse power, not utilized for manufacturing purposes. Such raw material as fruit and vegetables could be supplied for a canning factory. The natural products are clay, sand, peat, timber and stone. The village is in need of a first-class hotel and wood-working plant.

The country surrounding the village is suitable for farming purposes about 2,000 acres of land suitable for crop-raising is improved. The soil is a clayey loam, about one-half of the land is level and free from stone and the remainder rolling, stony and some sand.

HIGH BRIDGE.

High Bridge, Ashland Co. Population about 200. An unincorporated village located on the W. C. Ry., 18 miles from Ashland, the county seat and nearest banking point; 8 miles from Superior, and 328 miles from Milwaukee. National Express; telegraph and telephone connections. Good shipping facilities and passenger service.

The village is supplied with one general merchandise store, and a boarding house.

The village is in need of a creamery and saw mill and any number of men could be secured to work the entire year. Wood is used for fuel obtained from the adjacent country, and coal



ASHLAND COUNTY RYE.

from Ashland. There are no manufactories or workshops in the village. The village can be supplied with timber, clay, sand and stone. The surrounding country is adapted to farming and is about one-half developed.

SANBORN.

Sanborn, Ashland Co. Population, 150. An unincorporated village located on the D. S. S. & A. Ry., 12 miles from Ashland, the county seat and banking point, and 79 miles from Superior. Express, Western; telegraph and telephone connections. Good shipping facilities and train service.

The village is supplied with good water, three general stores, one hotel, and a public school. The land is all heavily timbered and saw mills are badly needed. Some help can be secured to work in mills and factories.

The country is suitable for farming and only a small per cent is improved. The timber on the land will pay for the improvements.

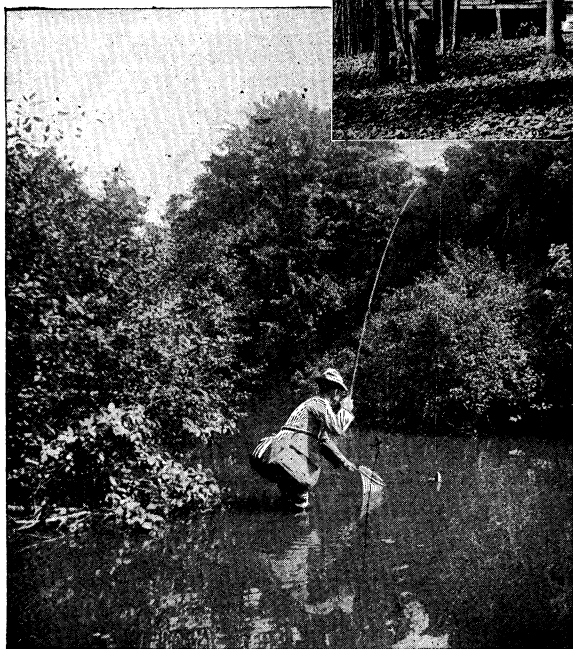
SIANAGOLDEN.

Sianagolden, Ashland Co. Population, 300. An unincorporated village located on a private railway, $3\frac{1}{2}$ miles from Glidden, the nearest shipping and banking point; 45 miles from Ashland, and 123 miles from Superior. Has telephone connections and stage daily to Glidden.

Has graded streets, good walks, electric light plant, one general store, a boarding house, and a public school employing two teachers.

Steam power is used. Wood is used for fuel obtained from the adjacent country. The village can be supplied with an abundance of timber and stone. No trouble to secure help here. Good location for a tannery or tan-bark extract factory, or wood-working establishment.

The surrounding country is good for farming purposes and a very small part of the land is improved. The soil is a clay loam, 10 per cent swamp and 80 per cent level and free from stone. Will be a good farming country when the timber is cleared away.



“SPECKLED TROUT ARE ABUNDANT IN THE STREAMS.”

BARRON COUNTY.

Barron county is located in the northwestern part of the state. The area is 878 square miles. The population in 1905 was 23,376, a gain of 4,699 over 1900. One-fourth of the population is of foreign birth, Norwegians and Germans being in the majority. It is essentially an agricultural county, with vast areas of cut-over lands, amounting to about 40 per cent of the county, still unsettled. About 352,000 acres are being used for farming.

of which amount 136,332 acres are improved land, as against 207,384 acres used for farming and 64,618 acres improved land in 1890. The value of these farms in 1905, with improvements, was \$7,204,247 as compared with \$2,273,930 in 1890. The soil in the southern part of the county is a sandy loam which extends up into the north central part where it changes into a clayey loam. This soil is easily worked because of its coarse grain and is excellently adapted to the raising of potatoes and market gardening. It has many of the characteristics of the soil of Waupaca and Portage counties. The soil in the northern and northeastern parts is a clayey loam of a fine texture and heavy to work. The surface is hilly and in places quite stony but not to such an extent as to interfere permanently with the tillage. It furnishes excellent grazing lands for sheep farming, this being especially true in the region of Rice Lake. In the western part of the county the soil is a loamy clay, ranking among the best soils in the northern part of the state and unsurpassed for general farming, dairying and stock raising. The county is well drained by numerous streams. There are some small lakes and but few swamps. The chief crops together with the amount of land devoted to each in 1890 and 1905, were approximately as follows:

	Acreage in 1890.	Acreage in 1905.
Hay	31,092	53,809
Potatoes	1,852	6,075
Wheat	2,174	3,073
Corn	2,991	3,242
Oats	11,966	31,574
Barley	93	3,502

An increasing interest is annually displayed in the raising of sugar beets. In 1905 there were within the county 41 cheese factories and 20 creameries. The price of wild and unimproved land which can be made tillable ranges from \$10 to \$20 per acre; improved land ranges from \$25 to \$65 per acre, depending upon location. Barron is the county seat. The population of the cities, towns and villages for 1905 was as follows:

BARRON COUNTY.

TOWNS, CITIES AND VILLAGES.	Families.	AGGREGATE POPULATION.			COLOR.			Ex-soldiers and sailors.	Militia.
		Male.	Female.	Total.	White.	Colored.	Indians.		
Almena	188	493	436	929	929	.....	7	137
Arland	164	431	368	799	799	.....	1	151
Barron	168	494	415	909	909	.....	7	104
Barron, city:									
ward 1	52	157	123	280	280	.....	.....	.....
ward 2	162	315	352	667	666	*1	.....	.....
ward 3	98	200	216	416	416	.....	.....	.....
ward 4	66	143	163	311	311	.....	.....	.....
Total, city	1,674						35	306	
Bear Lake	79	217	193	410	410	.....	2	72
Cedar Lake	63	177	140	317	317	.....	6	61
Chetek	202	505	445	950	950	.....	6	168
Chetek, city	186	373	357	730	730	.....	23	127
Clinton	209	609	491	1,100	1,100	.....	5	116
Crystal Lake	143	402	352	754	754	.....	5	106
Cumberland	272	751	693	1,444	1,444	.....	5	174
Cumberland, city	308	766	727	1,493	1,484	9	11	179	
Dallas	224	568	496	1,064	1,064	.....	9	163
Dallas, village	84	193	157	350	350	.....	8	78
Dovre	213	563	514	1,077	1,077	.....	6	219
Doyle	96	274	227	501	501	.....	4	83
Lakeland	155	409	377	786	761	26	4	135	
Maple Grove	329	916	789	1,705	1,705	.....	8	300
Oak Grove	198	541	455	996	996	.....	1	180
Prairie Farm	148	424	386	810	810	.....	1	164
Prairie Farm, village	68	148	183	331	331	.....	10	48
Rice Lake	151	459	389	848	848	.....	2	148
Rice Lake, city:									
ward 1	148	361	340	701	701	.....	.....	.....
ward 2	175	459	441	900	900	.....	.....	.....
ward 3	148	381	345	726	726	.....	.....	.....
ward 4	236	536	547	1,083	1,083	.....	.....	.....
Total, city	3,410						36	648	
Stanford	157	463	402	865	865	.....	.....	101
Stanley	160	495	400	895	890	.....	5	147
Cameron, village	110	290	250	540	540	.....	5	105
Sumner	111	271	267	538	538	.....	13	78
Turtle Lake	178	506	454	960	960	.....	.....	143
Turtle Lake, village	101	231	205	436	436	.....	4	93
Vance Creek	139	406	349	755	755	.....	5	125
Total	5,669	14,932	13,444	28,376	28,335	1	40	225	4,714

*Chinaman.

BARRON.

Barron, Barron Co. Population, 1,674. The judicial seat of Barron county is located on the M., St. P. & S. Ste. M. Ry., and on Yellow river, 56 miles from Chippewa Falls; 97 miles from St. Paul; 119 miles from Superior, and 288 miles from Milwaukee. American Express; telegraph and telephone connections. Good shipping facilities and passenger service.

The city has good streets and walks, fine public buildings and substantial business blocks. Is lighted by electricity, has 2 banks, 2 drug stores, 4 hardware and 7 general stores, a laundry, 3 hotels, 4 boarding houses, high and graded public schools employing 12 teachers, 5 churches representing the leading religious denominations. 4 physicians, 5 lawyers, 2 public halls and

2 weekly newspapers. The manufacturing industries include flour, stave and heading mills, spinning wheel and bee supply factory, saw mills and woolen mills.

Steam power is used. Wood and coal are used for fuel. Wood is obtained from the adjacent county and coal from St. Paul and Minneapolis. Vegetables can be supplied for canning. The city can be supplied with large quantities of timber. Plenty of help can be secured in the city. Good location for sugar factory, foundry and machine shops, wagon factory and a stump puller factory.

The city is located in a first class farming section and not over 50 per cent of the land suitable for crop raising is improved. The soil is a clayey loam and is about all level and free from stone. Hay, grain of all kinds, potatoes and sugar beets are the principal crops.

CHETEK.

Chetek, Barron Co. Population, 730. Is an incorporated city located on the C., St. P., M. & O. Ry., 14 miles southeast of Barron, the county seat; 33 miles from Chippewa Falls; 131 miles from St. Paul, and 280 miles from Milwaukee. American Express; has telegraph and telephone connections. Good shipping facilities and passenger service.

The city has an electric light plant, a bank, 2 drug stores 5 groceries, 2 hardware and 5 general stores, good hotels and boarding houses, high and graded public schools employing 6 teachers; 5 churches, 3 physicians, 1 lawyer, opera house, flour mill, and saw mills. A weekly newspaper is published.

An unlimited amount of help can be secured in the city and adjacent country. The city has a water supply to the extent of 150 H. P. not yet utilized. Wood and coal are used for fuel, wood being obtained from the surrounding country and coal shipped in. Raw materials such as fruit, vegetables, and berries of all kinds can be supplied in great quantities for canning. The country furnishes clay, sand, stone and timber for building and commercial purposes. There are no idle factories or workshops in the city and no failure in that line of business has ever occurred.

The country surrounding the city is well adapted to farming and only about 50% of the lands suitable for crop raising is improved. Farming is becoming more profitable in this locality each year. Hay, grain of all kinds, potatoes and sugar beets are the principal products. Dairying is another important industry. Situated near Chetek is a beautiful body of water 13 miles



PASTURING ON BURNED-OVER LANDS IN NORTHERN WISCONSIN.

long by 2 miles wide, the shores dotted with summer cottages, where fishing, bathing, rowing, sailing and hunting can be enjoyed. This makes this city one of the most popular summer resorts in the state. One of the largest and most successful Chautauquas is located here which brings thousands of visitors to the city every year.

Chetek is in need of a large summer hotel, a canning factory, a furniture factory and a paper mill.

CUMBERLAND.

Cumberland, Barron Co. Population, 1,193. Is an incorporated city, located on the C., St. P., M. & O. Ry., in the northwestern part of the county, 18 miles northwest of Barron, the county seat; 59 miles from Superior; 77 miles from St. Paul, and 341 miles from Milwaukee. American Express; has telegraph and telephone connections. Good shipping facilities and passenger service.

Has an electric light plant, 2 banks, 2 drug stores, 2 groceries, 3 hardware and 2 general stores, a laundry, furniture store, 3 hotels, 2 boarding houses, high and graded schools employing 11 teachers, 7 churches representing all the leading denominations, 3 physicians, 2 lawyers, tailor shop, bakery, saw mill, stave and heading mill, planing mill, and 2 weekly newspapers.

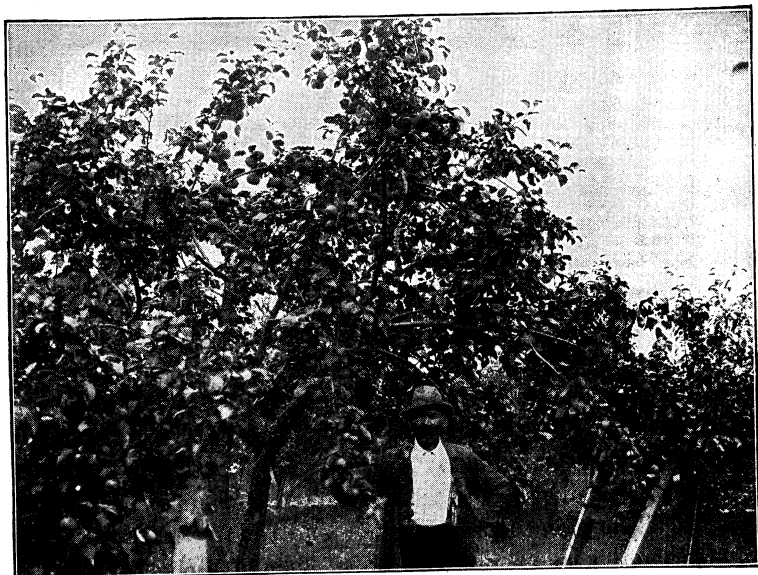
There is a small water power for manufacturing purposes estimated at 40 H. P., not utilized. Wood is used for fuel, obtained from the adjacent country in large quantities. Coal can be obtained from Ashland or Superior. Raw materials such as fruit, vegetables and corn can be furnished for canning factory as soon as a demand is created. Brick clay, sand, peat, timber and stone are the natural products. Red sandstone is quarried near the city.

The city has wide, well-kept streets, fringed with many beautiful shade trees, has a \$40,000 high school building, public library, opera house, good hotels and many beautiful and substantial mercantile buildings and private residences. Being located on an island formed by Beaver Dam Lake, a body of water 10 miles long, this city is an ideal summer resort. There is a variety of natural scenery, also fine fishing, which, with the delightful climate, makes this section the haven of rest of thousands of visitors during the summer.

The city needs a large first class summer hotel capable of accommodating at least 200 guests.

In the line of manufacturing industries Cumberland needs a canning factory and a wood working plant.

The surrounding country is well adapted to farming and only about 25% of the land suitable for agricultural purposes is improved. The soil is a clayey loam, about 75% of which is level and free from stone; there is very little swampy or sandy land in the vicinity. The unimproved portion of the country is covered with different kinds of hardwood timber interspersed with white pine. Small fruits, hay, grain of all kinds, potatoes and corn are the principal farm products.



AN ORCHARD SCENE.

DALLAS.

Dallas, Barron Co. Population, 350. A village on the M., St. P. & S. Ste. M. Ry., 55 miles from Chippewa Falls; 122 miles from Superior and Duluth; 129 miles from Ashland; 92 miles from St. Paul; 302 miles from Milwaukee and 387 miles from Chicago. Express, U. S., American and National; telegraph and telephone connections. Shipping facilities and passenger service fair.

Has a bank, 1 drug store, 3 general stores, 1 hardware store, 1 millinery store, 2 physicians, graded school employing 3 teachers, 2 hotels capable of accommodating 60 people, 1 implement store, meat markets, blacksmith shop, cheese factory and a feed mill.

Wood is used for fuel obtained from adjacent country at a low price. Plenty of help can be secured in the village and adjacent country. Such raw materials as fruit and vegetables can

be furnished for canning. The natural products are clay and sand.

The village has graded streets, board and cement sidewalks, shade trees, nice picnic groves, etc. Has Norwegian Lutheran and English Methodist churches.

Dallas is in need of a canning factory and a brick yard.

The country surrounding the village is suitable for farming purposes and about 50% of such lands is improved. At least one-half of the country is level and free from stone. A very small per cent is rough, very little is swampy and about 25% sandy. Small fruits, hay, grain and potatoes are the principal farm products.

HAUGEN.

Haugen, Barron Co. Population, 250. An unincorporated village located on the C., St. P., M. & O. Ry., $7\frac{1}{2}$ miles from Rice Lake, the nearest banking point, 17 miles north of Barron, the county seat, 51 miles from Chippewa Falls, 100 miles from Ashland and 327 miles from Milwaukee. American Express; telegraph and telephone connections. Good shipping facilities and passenger service.

Has a drug store, 2 groceries, 2 hardware and 2 general stores, a hotel, 2 boarding houses, public school employing 2 teachers, meat market, blacksmith shop and a saw mill.

Has a small water power for manufacturing purposes estimated at 25 H. P. undeveloped. Wood is used for fuel, being obtained in large quantities from adjacent country. Raw materials such as fruit and vegetables can be supplied for a canning factory. Plenty of clay, sand, stone and timber is furnished by the surrounding country. A limited amount of help can be secured in the village and adjacent country. There are no manufacturing industries located in the village. A wood-working plant to work up the timber is needed.

The country surrounding the village is suitable for farming purposes and only a very small portion is improved.

PRAIRIE FARM.

Village of Prairie Farm, Barron Co. Population, 330. Located 17 miles southwest of Barron, the nearest banking point, and 6 miles from Ridgeland on the M., St. P. & S. Ste. M. Ry., the nearest railway approach, 135 miles from Ashland, 130 miles from Superior and Duluth, 104 miles from St. Paul, 62 miles from Chippewa Falls, 338 miles from Milwaukee and 423 miles from Chicago. Has telephone connections.

Has a drug store, 5 grocery stores, 1 hardware store, 2 department stores, 1 dry goods store, graded school employing 3 teach-

ers; a physician, 2 hotels, 3 boarding houses, restaurant, meat market, 3 blacksmiths and wagon shops and a creamery.

Has a water power that could be utilized for manufacturing purposes, estimated at 50 H. P. Wood is used for fuel, obtained from adjacent country. Sufficient help to operate a small factory could be secured in the village and surrounding country. Vegetables could be supplied for a canning factory which is best suited to the needs of the place. The village is well supplied with clay, sand, timber and stone.

The country surrounding the village is well adapted to farming and about 60% of the land is under cultivation. The land is mostly level and free from stone; about 10% level and stony, 2% swampy and 5% sandy.

RICE LAKE.

Rice Lake, Barron Co. Population, 3,410. An incorporated city on the C., St. P., M. & O. and the M., St. P. & S. Ste. M. Rys., and on the shores of Rice Lake, 13 miles from Barron, the county seat, 44 miles from Chippewa Falls, 100 miles from Superior and 320 miles from Milwaukee. American and U. S. Express; telegraph and telephone connections. Good shipping facilities and passenger service.

Has an electric light plant, 3 banks, 3 drug stores, 10 groceries, 3 dry goods stores, a laundry, an excellent high and graded school system employing 24 teachers, Catholic, Lutheran and Methodist churches, 6 physicians, 5 lawyers, 5 hotels and 2 boarding houses, tannery, saw and planing mills, an opera house and two weekly newspapers.

There is plenty of help to be had in the city.

Wood and coal are used for fuel; the former is obtained from adjacent country and coal is shipped in. Vegetables can be furnished for a canning factory and the city can be supplied with such raw materials as clay, sand, stone and timber. This is a good location for wood working factories, boot and shoe factory or woolen mills. There is a water power of 900 H. P. for manufacturing purposes and an additional 500 H. P. undeveloped.

The city is a fine summer resort, has wide and well kept streets and walks, beautiful public parks, public library costing \$10,000, city hall costing \$9,000, new high school building costing \$40,000, 4 ward schools and two miles of lake frontage.

The surrounding country is suitable for farming and only

about 40 per cent of the land suitable for crop raising is improved. The surrounding country is about 95% level and free from stone and 5% rough.

TURTLE LAKE.

Turtle Lake, Barron Co. Population, 436. An incorporated village on the C., St. M. & O. and the M., St. P. & S. Ste. M. Rys., 112 miles from Superior and Duluth, 16 miles from Barron, 64 miles from St. Paul, 62 miles from Chipewewa Falls, 309 miles from Milwaukee, 394 miles from Chicago. Express, U. S. and American; telegraph and telephone connections. Shipping facilities are the very best.

The village has a bank, a drug store, 5 grocery stores, 1 hardware store, 4 general stores, 1 physician, graded school employing 3 teachers, 3 hotels, 1 boarding house, Catholic, Episcopal and United Brethren churches, creamery, saw mill, feed mill and blacksmith shop and a weekly newspaper.

Help can be secured in the village and adjacent country. Wood is used for fuel obtained from surrounding country. Such raw materials as fruit, vegetables and some others can be furnished for a canning factory. The natural products are clay, sand, stone, peat and timber.

The location of the village is unusually favorable for development and it will soon be the center of a great live stock, dairy and general farming region. Has a large Union Railway depot, substantial business blocks, and first class hotels.

Turtle Lake is a summer resort having three beautiful lakes within easy reach where are located a number of summer cottages.

The village is in need of a grist mill and a canning factory.

The country surrounding the village is good for farming purposes and only about 1-10 of the land suitable for crop raising is improved. Of the land, about 75% is fairly level and free from stone; of the remainder, a small portion is rough, very little swampy and none sandy. The soil is a rich clay loam with a deep clay subsoil, making the country well fitted for diversified farming. Hay, grain of all kinds, small fruits and vegetables are the principal farm products. Dairying is an important industry.

BAYFIELD COUNTY.

Bayfield county is located in the northern part of the state bordering on Lake Superior. It is the second largest county in the state, having an area of 1,497 square miles. The population in 1905 was 15,904, a gain of 1,512 over 1900. It has a large number of foreigners, the majority being Norwegians, Swedes or Canadians, although there is a considerable settlements of Finns and Germans. Like all of the northern counties, Bayfield county is largely unsettled. The land surface in this county is very irregular, giving many of the roads steep and uncertain grades. Covering all of the Apostle Islands, the peninsula and stretching inland some miles from the lake shore, the soil is a red marly clay of very fine texture. In most places this soil is mixed with enough sand to make it good for agricultural purposes. South of this red clay and covering the north-central part of the county the soil is sandy, coarse and open in texture. Only by irrigation and intensive farming can it be made very productive. The central and southern part of the county is a clayey loam of the lighter varieties, which soil is the most common in the northern part of the state. This land has a rolling surface and in places is quite stony but not to such an extent as to interfere seriously with tillage. It is an excellent grazing land, and sheep-raising is destined to become one of the leading industries. Only about 105,000 acres are used for agricultural purposes, of which amount less than 15,000 acres have been improved. In 1890 the farm area was 12,960 acres, of which only 1,297 acres were improved. The value of the farms and improvements in 1905 was \$1,154,663 as compared with \$104,560 in 1890. The farm acreage in 1905 represented less than 11 per cent of the area of the county. The chief agricultural products are oats, corn and hay. The price of land from which timber suitable for saw logs has been removed ranges from \$5 to \$10. per acre, and all but a small proportion of this land can be made tillable. The price of improved land ranges from \$20 to \$40 per acre. Washburn is the principal city and county seat: The following table shows the population statistics of the local political divisions for 1905:

BAYFIELD COUNTY.

TOWNS, CITIES AND VILLAGES.	Families.	AGGREGATE POPULATION.			COLOR.			Ex-soldiers and sailors.	Militia.
		Male.	Female.	Total.	White.	Colored.	Indians.		
Barnes	73	143	98	241	234	7	4	57	
Bayfield	513	1,540	1,135	2,675	2,179	4	*402	19	
Bell	35	98	63	161	161	1	2	35	
Cable	97	226	158	384	383	1	4	58	
Drummond	99	499	210	709	630	19	3	310	
Eileen	119	348	237	605	637	8	.....	303
Iron River	227	664	584	1,248	1,248	.....	7	295
Mason	259	818	541	1,359	1,359	.....	3	261
Oriente	21	114	28	142	142	.....	.....	43
Oulu	104	283	242	525	525	.....	.....	94
Port Wing	160	538	322	860	860	.....	1	322
Pratt	146	475	315	790	790	.....	4	118
Washburn	183	947	334	1,281	1,281	.....	2	524
Washburn, city:									
ward 1	55	165	145	310	310	.....	.....	62
ward 2	133	364	319	683	683	.....	.....	152
ward 3	136	383	288	671	671	.....	.....	183
ward 4	139	413	318	731	731	.....	.....	186
ward 5	184	594	431	1,025	1,025	.....	.....	270
ward 6	97	249	279	528	528	.....	.....	96
ward 7	128	392	308	700	700	.....	.....	155
ward 8	47	154	122	276	276	.....	.....	52
Total, city...4,924							6	.....
Total	2,955	9,407	6,497	15,904	15,373	4	527	55	3,794

*241 Indians, not taxed.

BAYFIELD.

Bayfield, Bayfield Co. Population, 2,675. On the shore of Lake Superior at the terminus of the northern division of C. St. P. M. & O. Ry., 21 miles from Ashland, 97 miles from Superior and Duluth, 200 miles from St. Paul, 183 miles from Eau Claire, 367 miles from Milwaukee, 452 miles from Chicago. American Express. Telephone and telegraph. Shipping facilities and passenger service good.

Has an electric light plant, one bank, one drug store, six grocery stores, two hardware stores, five dry goods stores, one laundry, two saw mills, box factory and four fishing companies. Has two physicians, one lawyer, good schools employing 18 teachers, two good hotels, and four boarding houses. Two weekly newspapers, churches of the Catholic, Congregational, Episcopal, German Lutheran, Methodist, Presbyterian, Scandinavian and Swedish Lutheran denominations. The Bayfield Harbor & Great Western Ry runs north from the city a distance of 12 miles.

There is no water power. Wood and coal are used for fuel. Wood is obtained from the vicinity and coal from the docks at Washburn and Ashland. Help can be secured in the village

and adjacent country. Raw materials such as fruit and vegetables could be furnished for canning. The village can be furnished with clay, sand, stone and timber. There are two saw mills in operation with material to last for several years, box factory and several large fish packing establishments. It is lighted by electricity, the plant being owned by the city; has an excellent system of water works and an efficient fire department. The city is in need of a canning factory, creamery or small manufacturing plant.

The country surrounding the city is well adapted to farming, but only a small portion is improved. The cut-over lands are naturally adapted to agricultural purposes, the soil is rich and responds quickly under cultivation, making it the best opening for the home seeker to be found anywhere in the Lake Superior region. Situated five and one-half miles south of Bayfield, skirting Chequamegon bay, is the Nourse farm, which has the reputation of growing the "Sliced Strawberry," which has made the hotels of Duluth and Superior famous. Bayfield is a summer resort, has fine public buildings, two large hotels, well-kept streets and lawns, and is well provided with shade trees. Madaline and Bass Islands, two summer resorts, are within a half hour's sail. The lakes and streams abound with fish and the forests are full of game.

BIBON.

Village of Bibon, Bayfield Co. Population, 250. Not incorporated. Located at the Junction of the D. S. S. & A., and C. St. P. M. & O. Ry's., 19 miles from Ashland, 72 miles from Superior and Duluth, 164 miles from St. Paul, 147 miles from Eau Claire, 413 miles from Milwaukee. Express, U. S. & American. Telegraph and telephone connections. Good shipping facilities and passenger service.

Has long distance telephone connection, school employing one teacher, two hotels accommodating 75 people, one grocery store and one general stock of hardware. Has planing mill and a lumber yard.

Raw materials for a canning factory could be furnished if there was a demand for them. The village can be supplied with clay, sand and timber. Wood is used for fuel, obtained from the surrounding country. Coal from Ashland and Superior. The village is supplied with water for household purposes and the White river would furnish water power, as yet undeveloped.

The surrounding country is suitable for farming purposes

but only a small portion is improved. About one-third of the land is swampy, one-third rough and the remaining one-third level and free from stone.

The village is in need of canning or furniture factory, pulp or paper mill, box or wagon factory. All the help required could be obtained in the village or surrounding country.



SAW MILL WHERE LOGS ARE CONVERTED INTO CASH.

PORT WING.

Port Wing, Bayfield Co. Population, 600. An unincorporated village located on Lake Superior 18 miles from Iron river, the nearest rail approach and banking point. Connected in summer by boats with Ashland, Superior and Duluth. Has telephone connections. Stage daily to Iron River.

Has good streets and walks, a drug store and four general stores, two hotels, graded public schools employing four teachers, Catholic, Presbyterian and Swedish churches, two physicians, village hall, and creamery. Fine climate, good trout fishing on the inland streams and plenty of game in the nearby forests. Good location for charcoal kiln or excelsior factory.

Help can be secured in the village. Raw materials such as fruit, vegetables and fish can be supplied for a canning factory.

The village can be supplied with clay, sand, timber and the finest of red sandstone.

The country surrounding the village is excellent for farming purposes only a small portion being improved. The land is level and free from stone excepting along the lake shore, and the soil is composed of a mixture of sand and clay. Fruit and vegetables can be grown in abundance. Apples being especially fine. The soil is well adapted for raising potatoes and grass can be grown on the same land eight or nine years without reseeding. Good markets for all kinds of produce are found in Ashland, Superior, Duluth, Bayfield and Washburn.

WASHBURN.

Washburn, Bayfield Co. Population, 4,924. County seat of Bayfield county, located on Chequamegon bay an arm of Lake Superior, and on the C., St. P. M. & O., and the N. P. Ry's 13 miles from Ashland, 89 miles from Superior and Duluth, 188 miles from St. Paul, 359 miles from Milwaukee and 444 miles from Chicago. Express, American. Telegraph and telephone. First class shipping facilities and passenger service.

Has 2 banks, 3 drug stores, 20 grocery stores, 5 hardware stores, 3 department stores, 10 dry goods stores, 1 laundry, 4 school buildings, 30 teachers employed, 5 physicians, 5 lawyers, 12 hotels and 5 boarding houses, 2 newspapers, box factory, 3 saw mills, 1 dynamite plant costing \$750,000. Machine shop, grain elevator, capacity 3,000,000 bushels, coal docks, lumber, cedar post and pole yard. Has a fine water system for household purposes, electric light plant, Catholic, Congregational, Episcopal, Lutheran and Methodist churches.

An ample supply of help could be secured in the city and adjacent country. Wood and coal are used for fuel. Wood is obtained from the surrounding country and coal from docks in the city. The city can be supplied with clay, stone and timber. The stone quarries adjacent to the city produce magnificent brown-stone.

Washburn is a summer resort, has good hotels and a number of boarding houses. The city would welcome any new manufacturing industries. This is also a good field for a veterinarian.

The surrounding country is suitable for farming purposes, only a very small portion of which is improved. The land is level and free from stone.



SCENE IN NORTHERN WISCONSIN.

BROWN COUNTY.

Brown county is located in the northeastern part of the state at the head of Green Bay. The area is 518 square miles. The population in 1905 was 52,026, a gain of 5,667 over 1900. Being one of the first counties of the state to be settled, the population is largely of native birth. Among the foreign settlers Germans, Belgians and Poles are the most numerous. Nearly all of the county is a heavy red clay soil of an exceedingly fine texture. Under careful farming this soil responds remarkably well. It is similar to the soil of Ashland, Bayfield and Douglas counties. There is practically no swamp land in the county. A few tracts of sandy loam are found near the shore of Green Bay. The area of the county devoted to agricultural purposes in 1905 was 284,000 acres, of which 174,000 acres were improved. The value of the farms together with their improvements was \$4,205,892. A considerable portion of the western half of the county is occupied by the Oneida Indian Reservation. The principal crops and the acreage devoted to each in 1890 and 1905 were as follows:

	Acreage in 1890.	Acreage in 1905.
Hay	35,108	52,165
Wheat	19,045	8,161
Corn	2,243	2,000
Oats	28,367	45,096
Barley	2,537	10,441
Rye	9,901	9,088

Clover seed is also an important crop. A growing interest is manifested in the culture of sugar beets, about 625 acres being devoted to that purpose in 1905. The dairy interests of the county occupy an important position, there being 41 cheese factories and 12 creameries in 1905. The price of unimproved land ranges from \$15 to \$25 per acre, and for improved land the range of prices is from \$35 to \$60 per acre. Green Bay is the county seat. The following table shows the population statistics of the cities, villages and towns in the county for 1905:

BROWN COUNTY.

TOWNS, CITIES AND VILLAGES.	Families.	AGGREGATE POPULATION.			COLOR.			Ex-soldiers and sailors.	Militia.
		Male.	Female.	Total.	White.	Colored.	Indians.		
Allouez	111	707	401	1,108	1,077	25	6	.....	89
Ashwaubenon	95	300	246	546	546	.....	.....	.....	110
Bellevue	144	471	406	877	877	.....	.....	4	174
De Pere	146	470	392	862	862	.....	.....	.....	145
De Pere, city:									
ward 1	247	544	542	1,086	1,034	1	1	.....	208
ward 2	265	897	492	1,189	1,186	.....	3	.....	196
ward 3	278	634	632	1,266	1,266	.....	.....	.....	247
ward 4	197	516	466	982	977	5	.....	.....	189
Total, city...4,523								50	
Eaton	187	628	546	1,171	1,171	.....	.....	1	194
Glenmore	228	761	656	1,417	1,417	.....	.....	9	300
Green Bay	160	487	414	901	9 1	.....	.....	7	182
Green Bay, city:									
ward 1	716	1,793	2,019	3,812	3,812	.....	.....	13	701
ward 2	429	1,114	1,039	2,153	2,147	.....	6	11	499
ward 3	374	946	815	1,761	1,757	4	.....	4	525
ward 4	832	1,938	1,803	3,741	3,737	3	1	15	653
ward 5	624	1,516	1,498	3,014	3,014	.....	.....	14	517
ward 6	664	1,771	1,543	3,314	3,314	.....	.....	16	631
ward 7	469	1,161	1,127	2,288	2,288	.....	.....	10	382
ward 8	580	1,451	1,320	2,771	2,771	.....	.....	7	623
Total, city...23,584									
Hobart	157	457	393	850	25	.....	*825	15	177
Holland	210	660	574	1,234	1,234	.....	.....	3	206
Howard	301	932	750	1,682	1,682	.....	.....	8	364
Humbolt	180	571	483	1,054	1, 54	.....	.....	1	205
Lawrence	132	508	468	1,026	1,026	.....	.....	12	160
Morrison	275	788	676	1,464	1,464	.....	.....	6	317
New Denmark	289	779	698	1,477	1,477	.....	.....	7	277
Pittsfield	233	757	662	1,419	1,419	.....	.....	11	222
Preble	416	1,207	1,084	2,291	2,291	.....	.....	10	370
Rockland	147	419	461	880	820	.....	.....	5	141
Scott	213	621	590	1,211	1,211	.....	.....	14	209
Suamico	213	716	616	1,332	1,332	.....	.....	14	222
Wrightstown	250	751	658	1,409	1,409	.....	.....	7	270
Wrightstown, village..	128	256	239	495	495	.....	.....	4	82
Total	10,631	27,177	24,740	52,026	51,146	38	842	287	9,787

*36 Indians. not taxed.

DE PERE.

City of De Pere, Brown Co. Population, 4,523. On C. & N. W. and the C. M. & St. P. Rys., 4¾ miles from Green Bay, 42 miles from Oshkosh, 142 miles from Madison, 123 miles from Milwaukee and 208 from Chicago. Express, U. S. and American. Good shipping facilities and passenger service.

The city contains 2 banks, 4 drug stores, a laundry, 3 hardware stores, 2 High Schools, 11 churches, representing all the leading religious denominations, 3 hotels, 3 public halls, 4 physicians, 2 lawyers, elevators, flour mill, cooperage and saw mill machinery factory, foundry and sash and blind factory, 2 creameries, 6 brick yards, 3 lime stone quarries, 5 factories and one of the largest writing paper mills in the world. Has electric light

plant and telephone system and electric railway connection. Six newspapers are published in the city.

Situated at the head of navigation on the Fox river, gives the city water communication with all lake ports. The river presents a magnificent power of from 3,000 to 4,000 horse power at this point, and gives factories the advantage of a cheap power and lake navigation. Coal is used for fuel obtained via Lake boats from Buffalo and Cleveland. Plenty of help can be secured in the city and adjacent country. Vegetables can be furnished in sufficient quantities for canning. The natural products are sand, clay, stone and timber.

The city is very prosperous and enterprising, finely located and has much beautiful scenery. Has substantial business blocks, fine public buildings, and beautiful residences. A magnificent college is located here for the education of young men for the priesthood. Has two high school buildings, good hotels and a large number of manufacturing industries employing hundreds of laborers. This makes the city a good market for all farm products. Manufactured articles, cattle, country produce, grain and hay constitute the shipments. The city could be made a very pleasant summer resort. Is in need of a wood working factory.

The country surrounding the city is well adapted for farming purposes, the land is well improved and the soil very fertile.

GREEN BAY.

Green Bay, Brown Co. Population, 23,584. Situated on Green Bay at the mouth of the Fox River, 113 miles from Milwaukee, 194 miles from Madison and 198 miles from Chicago. C. & N. W. Ry., C. M. & St. P. Ry., K. I. G. B. & W. Ry. south, The Hart Steamboat Line operates a number of boats to northern ports and the Lackawanna Green Bay Line connects this city with the east. Electric railway connections with all cities in Fox River valley; telephone connection; street railway; waterworks from artesian wells; gas and electric plants; Western Union and Postal telegraph; American and United States express.

Green Bay is the north-eastern metropolis of Wisconsin, and the natural market for a large territory both in this state and in Michigan. The country surrounding the city is one of the finest agricultural and grazing districts in the state. This fact, together with the excellent shipping facilities has made the city an important manufacturing and commercial center. In 1905 there were 103 manufacturing establishments with a total capital of \$3,749,056, employing 2,111 men and with an annual product valued at \$4,873,027. Compared with 1900 there

was an increase of 30.4% in the number of establishments, 38.6% increase in capitalization, 55.5% in the number of wage-earners and 79.9% in the annual product. The chief manufactured products are lumber, furniture, malt liquors, foundry products, confectionery goods, canned goods, matches, paper and pulp. An extensive wholesale trade is conducted in groceries, drugs, crockery and fish.

There is a large amount of land in the city suitable for factory location, much of it having shipping facilities by rail and water. There are no unoccupied factories. A large increase in labor can be secured from the surrounding country. Various industries are desired and the city will offer reasonable inducements for the location of manufacturing plants and wholesale establishments. Wood, lumber and iron ore are near at hand. Coal is brought by boat from Lake Erie ports. Vegetables can be grown in large quantities to supply additional canning factories.

The city has a good system of public and parochial schools and a large business college. The leading religious denominations are represented and own large and expensive churches. There are also located here large hospitals, Catholic orphan asylum and the Odd Fellows' Home.

GREENLEAF.

Village of Greenleaf, Brown Co. Population, 500. Not incorporated. C., M. & St. P. Ry., $3\frac{1}{2}$ miles from Wrightstown, the nearest banking point, 16 miles from Green Bay, 98 miles from Milwaukee and 183 miles from Chicago. Express, United States; telephone and telegraph connections; shipping facilities good.

Has 2 grocery stores, 2 general merchandise stores, hotels capable of accommodating 100 persons, 2 boarding houses, graded schools employing 2 teachers, 2 churches, 2 blacksmith shops, and a grist mill.

The village is in easy reach of the principal wholesale centers of the west. Coal and wood are used for fuel. Wood is obtained from the local market and coal from the docks at De Pere or Green Bay. An ample supply of help can be secured from the village and surrounding country. Raw materials such as fruit and vegetables can be supplied for canning. The natural products are clay, sand, stone, peat and timber. The largest stone quarry in the state is located near the village.

The village has shady public parks, good churches, and schools, undeveloped water power estimated at 1,000 horse power, sub-

stantial business blocks and modern residences. Could be made a summer resort. Is in need of a hardware store, furniture store, harness shop, jewelry store, tailor shop, laundry, photograph gallery, and a first class hotel.

The village is surrounded by a fine farming country, 75% of the land being improved. The soil is a clayey loam, 90% of which is free from stone; 5% is swampy.

WAYSIDE.

Village of Wayside, Brown Co. Population, 300. Not incorporated; 22 miles south of Green Bay, the county seat, 9 miles from Grimmons on the C. & N. W. Ry., in Manitowoc Co., the nearest shipping point, 15 miles from De Pere, the nearest banking point, 25 miles from Manitowoc, 102 miles from Milwaukee and 187 miles from Chicago.

The village has 2 general merchandise stores, a hardware store, 2 hotels, 2 boarding houses, a physician and a public school employing 2 teachers.

There is no water power. Wood and coal are used for fuel. Wood is obtained from adjacent country and coal from docks at De Pere and Manitowoc. A limited amount of help could be secured in the village and surrounding country. Vegetables could be furnished for a canning factory. The village can be supplied with such natural products as clay, sand and timber.

In the line of manufactories the village has a cheese factory, cheese vat factory, wagon shops, planing mill, flour mill and saw mill.

The surrounding country is suitable for general farming; the soil is first class and the land is mostly improved.

WRIGHTSTOWN.

Village of Wrightstown, Brown Co. Population, 495. On the C. & N. W. Ry., and Fox River, 16 miles from Green Bay, 52 miles from Oshkosh, 57 miles from Manitowoc, 113 miles from Milwaukee and 198 miles from Chicago. American Express. Shipping facilities good. Telegraph and telephone connections.

This village has a bank, a drug store, six dry goods and grocery stores, two hardware stores, graded public schools employing five teachers, one physician, two hotels, two boarding houses, flour mill, blacksmith shop, three farm implement stores, two creameries and electric railway connections.

Boats navigate Fox river 8 months of the year. The river furnishes an abundance of water power which could be utilized for manufacturing purposes. Wood and coal are used for fuel.

The former is obtained from the adjacent country and the latter from the docks at Green Bay and De Pere. Such raw materials as fruit and vegetables can be supplied for canning. The natural products are clay, sand and stone. A limited amount of help can be secured in the village and surrounding country.

The streets are paved with crushed stone, has cement and plank walks and many beautiful shade trees. There are two public parks. Ridge Point two miles north on electric railway is a popular summer resort. Has Baptist, Catholic, German Lutheran and Methodist churches.

The country surrounding the village is first class for farming purposes and very nearly all the land suitable for crop raising is improved. About 80% of the land is level and free from stone, only a very small portion is rough and a small per cent sandy.

BUFFALO COUNTY.

Buffalo county is located in the west central part of the state on the Mississippi River. It has an area of 662 square miles. The population in 1905 was 16, 523. Less than one-fifth of the population is of foreign birth. Of this number, Germans represent nearly one-half. There are also a considerable number of Norwegian and Swiss settlers. It is a purely agricultural county with an excellent quality of soil. In the northern part of the county the soil is a sandy loam which is easily worked because of its rather coarse grain. The central and southern portion of the county is a clayey loam, well adapted to the raising of small grain and grasses. Along the banks of the Chippewa, Mississippi and Tempealeau Rivers the soil is more or less sandy. There is practically no tract which cannot be improved and made good tillable land. The county has many valleys and bluffs with some of the best soil found along the hillsides though there are large tracts of rich level land in the valleys and on the ridges. About 395,000 acres of land are now occupied for farming, of which amount one-half is improved and under cultivation. The value of farm lands and buildings in 1905 was about \$10,200,000 as compared with a value of only \$4,019,475 in 1895. The principal crops with their acreage in 1890 and 1905 were as follows:

	Acreage in 1890.	Acreage in 1905.
Hay	33,251	36,734
Wheat	31,274	11,619
Corn	18,193	23,471
Oats	26,651	52,297
Barley	2,490	16,365
Rye	2,688	3,187

There are 15 cheese factories and 11 creameries in the county. There is considerable land which can be partly cleared and farmed, such land being worth from \$5 to \$20 per acre, according to the location and amount of timber growing thereon. Partly improved land sells at from \$15 to \$25 per acre. The price of improved farm land ranges from \$35 to \$60 per acre, and the sale of some small tracts are recorded at \$100 per acre. Alma is the county seat. The population for 1905 of the cities, towns and villages was as follows:

BUFFALO COUNTY.

TOWNS, CITIES AND VILLAGES.	Families.	AGGREGATE POPULATION.			COLOR.			Ex-soldiers and sailors.	Militia.
		Male.	Female.	Total.	White.	Colored.	Indians.		
Alma	126	351	298	649	649	.....	.....	146
Alma, city	470	574	598	1,172	1,172	.....	15	250
Belvidere	155	411	361	772	772	.....	4	170
Buffalo	133	361	326	687	687	.....	.....	133
Buffalo, city	69	118	117	235	235	.....	3	39
Canton	138	390	322	712	712	.....	4	132
Cross	107	532	279	611	611	.....	1	133
Dover	147	461	355	816	816	.....	10	161
Fountain City	276	527	481	1,008	1,008	.....	19	213
Gilmanton	158	420	368	788	788	.....	6	144
Glencoe	143	431	372	803	803	.....	3	164
Lincoln	123	294	264	558	558	.....	1	121
Maxville	115	306	289	595	595	.....	4	104
Milton	58	149	129	278	278	.....	2	55
Modena	165	463	406	869	869	.....	8	13
Mondovi	132	376	354	730	730	.....	4	122
Mondovi, city	315	673	777	1,450	1,449	*1	26	251	
Montana	129	389	522	711	711	.....	3	161
Naples	173	455	426	881	881	.....	9	157
Nelson	295	752	686	1,438	1,438	.....	15	254
Waumandee	155	404	356	760	760	.....	3	161
Total	3,576	8,637	7,886	16,523	16,522	1	140	3,224	

*Japanese.

FOUNTAIN CITY.

Fountain City, Buffalo Co. Population, 1,008. Incorporated city on the C., B. & Q. Ry., 36 miles from La Crosse, 169 miles from Madison, 251 miles from Milwaukee and 299 miles from Chicago. Adams Express. Telegraph and telephone connections. Good shipping facilities and passenger service.

Is supplied with an electric light plant, 2 drug stores, 3 grocery stores, High School employing 6 teachers, 1 physician, 1 lawyer, flour mill, 2 grain elevators, brewery, hotels, Catholic, German Reformed Lutheran and Methodist churches, planing mill and semi-weekly newspaper. A steamer runs daily between the city and Winona, Minn.

The city is situated on the Mississippi river at the foot of beautiful hills. Has fine public buildings, a nice public park, 2 public school buildings, a public hall seating 800 people, good hotels, and substantial business blocks. Could be made a summer resort. Is in need of a canning factory.

Help can be secured in the city and adjacent country. Wood is used for fuel obtained from the farmers near the city. Vegetables can be furnished in sufficient quantities for canning. The surrounding country is adapted to farming and all the land suitable for crop raising is improved. All good soil.

MONDOVI.

Mondovi, Buffalo Co. Population, 1,450. Is an incorporated city located on the C., St. P., M. & O. Ry., and on the Buffalo river, 30 miles northwest of Alma, the county seat, 69 miles by rail from Eau Claire, 190 miles from Madison and 272 miles from Milwaukee. American Express. Telegraph and telephone connections. Fairly good shipping facilities and passenger service.

Is supplied with electric light plant, 2 banks, 2 drug stores, 3 hardware and 4 general stores, good public schools employing 15 teachers, Baptist, Catholic, Congregational, Evangelical and Methodist churches, 6 physicians, 4 lawyers, flour mills, cigar factory, grain elevators and marble works. Two weekly newspapers are published.

There is a water power estimated at 200 H. P. not developed. A good supply of help can be secured in the city and adjacent country. Fruit and vegetables can be furnished for a canning factory. The natural products of the country are clay, sand and timber, all of which can be furnished in large quantities.

Beautiful shade trees, clean streets and good walks make this a very pleasant little city to live in. Could be made as fine a summer resort, as Mirror Lake, a beautiful body of water, furnishes much recreation for visitors. Three good hotels furnish plenty of accommodation at the present time.

The city needs a canning factory.

About one-half of the country surrounding the city is level and free from stone, the remainder being rough with a small amount of swamps and sand. The soil is good for farming purposes and is nearly all improved.

NELSON.

Village of Nelson, Buffalo Co. Population, 300. Not incorporated; on the C., B. & Q. Ry., 60 miles from La Crosse, 72 miles from St. Paul, 48 miles from Eau Claire, 133 miles from Madison, 275 miles from Milwaukee and 323 miles from Chicago. The nearest banking point is Wabasha, Minn., four miles distant. Adams Express. Telegraph and telephone connections. Good shipping facilities and passenger service.

The village has three grocery stores, 2 hardware stores, 3 dry goods stores, 2 hotels able to accommodate 50 guests, graded school employing 2 teachers, a physician, blacksmith and wagon shop and a creamery.

There is no water power here. Wood is used for fuel, being very plentiful in the adjacent country. Considerable help can be secured in the village and surrounding country. Raw materials such as fruit, vegetables and fish can be supplied for canning. The natural products are clay, sand, timber and stone. The village is in need of a first class hotel and a canning factory.

The surrounding country is good for farming purposes, and about 50% of the land suitable for crop raising is improved. The country is rolling, some hills but no swamps; the valleys are sandy but the soil, taken as a whole, is rich and productive.

BURNETT COUNTY.

Burnett county is located in the north-western part of the state, bordering on the St. Croix River. The area is 881 square miles. About one-third of the population is of foreign birth and almost exclusively Scandinavian. Only 203,402 acres have been occupied for agricultural purposes, of which less than 45,000 acres are improved land. The value of the farms including improvements is \$2,654,248. In 1890 the farm acreage was 103,213, which together with improvements was valued at \$781,568. Along the river and for some distance back the land is broken and hilly. The county as a whole is rolling, and in some parts has the pitted surface characteristic of morainal topography. Only a comparatively small part of the county, 36% of its area, has been brought under cultivation, and vast tracts

are open to agriculture and grazing. The soil is mostly of a light sandy nature, coarse and open in texture and not very fertile. The soil is not uniformly light and comparatively poor, but scattered throughout the county are numerous tracts of sandy loam and along the margins where one type of soil merges into another, some excellent farming land is to be found. Small streams and lakes abound, which serve to moisten the soil and lend themselves to irrigation. Much of this land is better adapted to sheep farming than the land used for such purposes in the states further westward. The principal crops and their acreage in 1890 and 1905 were as follows:

	Acreage in 1890.	Acreage in 1905.
Wheat	874	3,000
Oats	1,994	6,005
Corn	938	2,717
Hay	9,168	36,734

Rye is also an important crop, about 700 acres being devoted to it. The price of unimproved land ranges from \$5 to \$10 per acre, and for improved land from \$25. to \$60. per acre, according to quality and location. The county has practically no railroad facilities, the only line being a short spur from Grantsburg to the state line. Grantsburg is the county seat. The following table shows the population statistics of the local political divisions in 1905.

BURNETT COUNTY.

TOWNS, CITIES AND VILLAGES.	Families.	AGGREGATE POPU- LATION.			COLOR.			Ex-soldiers and sailors.	Militia.
		Male.	Female.	Total.	White.	Colored.	Indians.		
Anderson	124	325	289	614	614	.....	2	80
Blaine	176	344	260	604	557	.....	47	120
Dewey	78	219	188	407	359	.....	48	76
Grantsburg	203	562	511	1,073	1,073	.....	4	148
Grantsburg, village ..	165	365	340	705	705	.....	7	129
Jackson	149	343	272	615	556	.....	45	7
La Follette	119	292	246	538	534	.....	4	110
Marshland	256	632	530	1,162	1,153	.....	9	209
Meenon	174	442	377	819	813	.....	6	140
Roosevelt	41	102	96	198	197	.....	1	28
Rusk	65	161	126	287	259	.....	28	56
Trade Lake	242	659	532	1,171	1,171	.....	.....	164
Wood Lake	122	597	471	1,068	1,068	.....	2	179
Total	1,914	5,023	4,238	9,261	9,073	188	64	1,551

GRANTISBURG.

Grantsburg, Burnett Co. Population, 705. Is an incorporated village, located on a branch of the N. P. Ry., in the southwestern part of Burnett county, of which it is the judicial seat, 17 miles from Rush City, Minn., 112 miles from Superior, 72 miles from St. Paul and 397 miles from Milwaukee. N. P. Express. Telegraph and telephone connections. Fairly good shipping facilities and passenger service.

Is supplied with electric light plant, 2 banks, a drug store, 2 hardware and 8 general stores, 2 hotels, 3 boarding houses, a high school employing 6 teachers, Baptist, Congregational, Lutheran and Methodist churches, 4 physicians, 2 lawyers, 2 starch factories, flour mill, excelsior factory, harness shop, 2 lumber yards and a brick yard. Two weekly newspapers are published.

There is a small undeveloped water power here. Wood and coal are used for fuel. Wood is plenty in the adjacent country and coal is shipped from St. Paul or Superior. Vegetables can be supplied for canning. The village can be supplied with clay, sand, peat, timber and stone. Help can be secured in the village and surrounding country.

The country surrounding the village is suitable for agricultural purposes and only about 50 per cent of the land is improved. The soil is a clayey and sandy loam. Good location for any kind of manufacturing industries; also a steam laundry.

CALUMET COUNTY.

Calumet county is located in the east-central part of the state, bordering on Lake Winnebago. The area is 317 square miles. The population in 1905 was 16,889. Of this number less than one-fifth are of foreign birth, of whom 85% are Germans. The farm acreage, 194,000 acres, represents practically the entire county, of which amount 140,000 acres are improved land. The value of the farms in 1905, including improvements, was \$14,734,265. In 1890 the farm acreage was 184,766 acres, which, including improvements, was worth \$7,927,070. Adjacent to the lake, the topography is somewhat rugged and abrupt, especially in the northern part. In the eastern part the topography is typical for the lacustrine clay area bordering on the great lakes in this state. The surface is generally

rolling and undulating, but containing no very pronounced hills or ridges. The soil throughout the larger part of this county is a fine heavy red clay, such as covers a large part of Brown, Ashland and Bayfield counties. In the southern part of the county the soil is a loamy clay of an excellent quality best adapted to general farming and dairying. There is considerable swampy land in the central, southern and eastern parts of the county composed largely of muck and peat. The acreage of the principal crops in 1890 and 1905 was approximately as follows:

	Acreage in 1890.	Acreage in 1905.
Wheat	20,374	3,583
Oats	15,580	21,778
Corn	5,117	5,536
Barley	17,240	37,304
Clover Seed	5,712	5,867
Hay	21,334	23,452

In 1905 there were 47 cheese factories and 2 creameries in the county. The price of improved lands without buildings ranges from \$75 to \$80 per acre, and with buildings the prices range from \$80 to \$110 per acre, according to location. There is but little unimproved land in the county. Unimproved low swampy lands sells at from \$25 to \$50 per acre. Chilton is the most important city and county seat. The table on page 465 shows the population statistics of the various cities, villages and towns in the county for 1905.

BRILLION

Brillion, Calumet Co. Population, 967. An incorporated village on the C. & N. W. Ry., in the northeastern part of the county, 22 miles from Manitowoc, 47 miles from Sheboygan, 26 miles from Green Bay, 99 miles from Milwaukee and 184 miles from Chicago. American Express. Telegraph and telephone connections. Has six passenger trains daily and good facilities for shipping freight.

Has electric light plant, 2 banks, 2 drug stores, 5 groceries, 2 hardware and 3 dry goods stores, graded school employing 7 teachers, 3 physicians, 1 lawyer, 2 hotels, 4 churches, flour, grist, planing and saw mills, iron works, a furniture and table factory, a creamery, cement block manufactories, carriage and wagon shops, 2 grain elevators and a brick yard. A weekly newspaper is published.

CALUMET COUNTY.

TOWNS, CITIES AND VILLAGES.	Families.	AGGREGATE POPULATION.			COLOR.			Ex-soldiers and sailors.	Militia.
		Male.	Female.	Total.	White.	Colored.	Indians.		
Brillion	287	771	750	1,521	1,521	.....	.....	4	232
Brillion, village	222	476	461	937	937	.....	.....	5	183
Brothertown	283	789	714	1,503	1,406	.....	97	13	259
Charlestown	552	645	593	1,238	1,235	3	.....	21	199
Chilton	243	644	593	1,234	1,234	.....	.....	9	191
Chilton, city:									
ward 1	108	203	219	422	420	2	.....	.....	.....
ward 2	127	232	291	523	523	.....	.....	.....	.....
ward 3	133	272	311	583	583	.....	.....	.....	.....
Total, city	1,528	.....	.....	.....	.....	.....	.....	18	235
Harrison	357	1,014	993	2,007	2,007	.....	.....	2	350
New Holstein	265	671	668	1,279	1,279	.....	.....	3	252
New Holstein, village	185	324	343	667	667	.....	.....	11	123
Rantoul	233	670	593	1,263	1,263	.....	.....	8	239
Hilbert, village	128	287	204	591	591	.....	.....	3	102
Stockbridge	395	1,022	873	1,895	1,768	7	120	19	395
Woodville	219	662	564	1,226	1,226	.....	.....	7	235
Total	3,437	8,682	8,207	16,889	16,665	12	217	123	2,995

Help can be secured in the village and adjacent country to work the entire year. There is no water power. Coal and wood are used for fuel. Wood is obtained at the local markets and coal from Green Bay, Manitowoc and Sheboygan. A canning factory could be supplied with vegetables. The natural products are clay, sand and stone.

The village has graded and macadamized streets, a beautiful public park, large brick village hall, good business blocks and many fine residences. Is not a summer resort but could be made one. Long Lake and other small lakes are located near the village making it a very pleasant place in summer.

A canning factory is needed.

Brillion is surrounded with a good farming country. The land suitable for crop raising is very nearly all improved. The surface is somewhat broken and hilly, but the soil is rich and productive.

CHILTON.

City of Chilton, Calumet Co. Population, 1,528. On the Superior Division of the C. M. & St. P. Ry., and on the Manitowoc river, 34 miles from Green Bay, 34 miles from Manitowoc, 78 miles from Milwaukee and 163 from Chicago. United States Express. Telegraph and telephone connections.

Has electric light plant, 2 banks, 2 drug stores, 8 grocery stores, 2 hardware stores, 4 dry goods stores, 1 laundry, good

schools employing 8 teachers, 3 physicians, 5 lawyers, 4 hotels with a total capacity for 100 guests, 6 boarding houses, shoe store, gents furnishing store, 6 churches, 2 flour mills, boiler works and machine repair shops, planing mill, brewery, large malt house, 2 machine shops, sash, door and blind factory and 2 weekly newspapers.

There is no water power at this place. Wood and coal are used for fuel. Wood is obtained from the surrounding country, and coal can be obtained at Manitowoc and Milwaukee. Plenty of help can be secured in the city and surrounding country to work the entire year. Fruit and vegetables can be supplied for canning purposes. There is a large deposit of clay for making vitrified brick and pottery, in the city limits; also an inexhaustible stone quarry one mile from the city. There is one idle factory building in the city used some years ago as a machine shop. The city is in need of a furniture or shoe factory and a manufactory of vitrified brick.

The country surrounding the city is one of the best farming sections in the state. The soil consists of a rich clay loam, gently rolling and free from stone. The land suitable for crop raising is very nearly all improved, and is noted as the best barley district in Wisconsin.

FOREST JUNCTION.

Forest Junction, Calumet Co. Population, 200. Not incorporated. On the C., M. & St. P. and the C. & N. W. Rys. in Brillion township, 12 miles north of Chilton, the county seat, and 6 miles from Brillion, the nearest banking point, 20 miles from Green Bay, 26 miles from Manitowoc, 38 miles from Milwaukee and 175 miles from Chicago. Freight and passenger facilities good. American and United States Express. Telegraph and telephone connections.

Has three general stores, one hardware store, two hotels, one boarding house, one physician, school employing one teacher, German Evangelical and German Lutheran churches.

There is no water power. Coal and wood are used for fuel. Wood is secured from the adjacent country and coal from Green Bay and Manitowoc. A limited supply of help, chiefly men and young people can be secured in the village and adjacent country. Fruit and vegetables could be furnished for canning. A canning factory and a cold storage would be best suited to the industrial needs of the village.

Forest Junction is in the midst of a rich farming country. About 85 per cent of the land suitable for crop raising is improved. The soil is fertile and the country gently rolling. The

village has a number of up-to-date business places, and the trades and professions are quite well represented.

HILBERT.

Hilbert, Calumet Co. Population, 591. Incorporated. Located on the C. M. & St. P., and W. C. Rys., 7 miles north of Chilton, the county seat, 27 miles south of Green Bay, 27 miles from Manitowoc, 85 miles from Milwaukee and 170 miles from Chicago. Freight and passenger facilities good. United States and National Express. Telegraph and telephone connections.

Has a gas plant, one bank, one drug store, three groceries, two hardware and two dry goods stores, one physician, two hotels, three boarding houses, good schools employing five teachers. Churches of the Catholic and Lutheran denominations, saw and planing mills and a woodenware factory.

Help can be secured in the village and adjacent country to work the year round. Coal and wood are used for fuel and can be obtained at the local lumber yards. There is no water power. Fruit and vegetables can be supplied for canning. Clay is the only natural product that can be supplied in large quantities.

The village is in need of a first-class hotel and a grist mill.

Hilbert is surrounded by a good farming country and about three-fourths of the land suitable for crop raising is improved. The soil is fertile and the land is level and free from stone. The village has good graded streets, good walks, substantial business and public buildings, and many nice residences.

NEW HOLSTEIN.

New Holstein, Calumet Co. Population, 667. On the C., M. & St. P. Ry., 41 miles from Green Bay, 41 miles from Manitowoc, 36 miles from Oshkosh, 71 miles from Milwaukee and 156 miles from Chicago. United States Express. Telegraph and telephone connections. Good shipping facilities and passenger service.

Has one bank, four grocery stores, two hardware stores, three dry goods stores, graded school employing four teachers, one physician, two hotels with a capacity for fifty guests, three boarding houses, one church, gas engine factory, boiler and machine shop, canning factory, creamery, flour mill, two elevators, two furniture stores and a lumber yard. A first-class hotel is needed. Good location for another canning factory and lime kiln.

There is no water power. Wood and coal are used for fuel. Wood is obtained from the immediate vicinity and coal is ob-

tained at Milwaukee and Chicago. Plenty of help can be secured in the village and surrounding country to work the entire year. The village can be supplied with sand, stone, timber and iron. There are no idle factories or workshops in the village and no failures in that line have ever occurred here.

The country surrounding the village is good for farming purposes and about seven-eighths of the land suitable for crop raising is improved. The soil is a loamy clay, 10 per cent of which is rough, 10 per cent stony, 10 per cent swampy, 10 per cent sandy and the remaining 60 per cent level and free from stone.

STOCKBRIDGE.

Stockbridge, Calumet Co. Population, 306. Unincorporated. Situated in Stockbridge township, about 9 miles from Chilton, the county seat and the nearest railroad station. The village is about 87 miles from Milwaukee and 172 miles from Chicago.

Has a bank, one drug store, three grocery stores, one hardware store, two dry goods stores, one furniture store, two wagon and one blacksmith shops, two harness shops, one hotel, two bakeries, grist mill, shoe shop and a good high school.

Help can be secured in the village and surrounding country to work the entire year. Coal and wood are used for fuel. Coal is obtained at Green Bay and Chilton and wood from the surrounding country. A small water power estimated at 150-horse power could be utilized for manufacturing purposes.

Raw material such as fruit and vegetables can be supplied in sufficient quantities for canning. The village can be supplied with clay, sand, stone and timber.

Stockbridge is located one and one-half miles from Lake Winnebago, in one of the most fertile valleys in Wisconsin. The soil is a sandy loam and the land is level and free from stone. All the best land is improved. Dairying is the chief industry.

The government Harbor of Refuge is located on the lake shore west of the village. The village is a summer resort and is in need of a first-class hotel to be located near the Government Harbor.

CHIPPEWA COUNTY.

Chippewa county is located in the west central part of the state. The area is 1,022 square miles. The population in 1905 was 32,000, of which number about one-third were of foreign birth. The Germans, Norwegians and Canadians represent nearly the entire number of foreign born. The farm acreage in 1905 was 340,315 acres, of which only 169,410 acres were improved land. The value of these farms including improvements was \$8,974,282. Prior to 1901 Chippewa county included what is now Rusk county. In 1890 the farm acreage of both these counties was only 275,632 acres, of which only 114,839 acres were improved. The value of these farms including improvements was at that time \$4,727,670. The farm acreage in 1905 represents only 52 per cent of the area of the county. The soil in the northern and eastern part of the county is a clayey loam, with a hilly surface and in places stony. It is a good productive soil well adapted to the raising of grain, corn and grasses. From the Chippewa River to the western boundary of the county the soil is a sandy loam yielding excellent results with potato, market gardening and small fruit farming. Sheep raising is also an important industry. In the river valleys the soil is sandy. A considerable and increasing acreage is each year being devoted to the raising of sugar beets, the acreage in 1905 being 1,541. Considering Chippewa and Rusk counties together in 1890, but Chippewa county alone in 1905, the principal crops and acreage for these years were as follows:

	Acreage in both counties in 1890.	Acreage in Chippewa county in 1905.
Potatoes	3,001	5,846
Hay	41,418	51,391
Corn	10,409	10,792
Oats	34,902	42,584
Wheat	4,485	2,177
Rye	1,156	1,913

There are 47 cheese factories and 18 creameries in the county. The price of unimproved cut-over lands range from \$8 to \$15 per acre, and for good improved land, from \$30 to \$60 per acre.

Chippewa Falls is the county seat. The population of the cities, towns and villages for 1905 was as follows:

CHIPPEWA COUNTY.

TOWNS, CITIES AND VILLAGES.	Families.	AGGREGATE POPULATION.			COLOR.			Ex-soldiers and sailors.	Militia.
		Male.	Female.	Total.	White.	*Colored.	Indians.		
Anson	167	434	382	816	816	.....	.....	11	135
Arthur	147	381	306	687	687	.....	.....	2	144
Auburn	261	779	706	1,485	1,485	.....	.....	6	259
New Auburn, village..	84	184	172	356	356	.....	.....	5	88
Bloomer	275	774	654	1,428	1,428	.....	.....	19	305
Bloomer, village	261	530	516	1,046	1,046	.....	.....	19	214
Chippewa Falls, city:									
ward 1	223	601	561	1,162	1,162	.....	.....	5	232
ward 2	250	634	638	1,272	1,272	.....	.....	3	235
ward 3	271	733	543	1,276	1,269	*7	.....	7	382
ward 4	137	293	337	630	628	2	.....	5	108
ward 5	222	504	552	1,056	1,056	.....	.....	5	120
ward 6	186	465	435	900	900	.....	.....	2	175
ward 7	132	344	316	660	660	.....	.....	2	121
ward 8	165	396	448	844	844	.....	.....	5	165
ward 9	154	370	361	731	731	.....	.....	7	134
ward 10	107	241	237	478	478	.....	.....	9	84
Total, city, 9,009									
Cleveland	104	287	233	520	496	.....	24	4	98
Colburn	181	497	434	931	931	.....	.....	5	175
Delmar	197	562	489	1,051	1,051	.....	.....	8	143
Eagle Point	220	751	586	1,367	1,367	.....	.....	11	264
Edson	217	647	557	1,204	1,204	.....	.....	9	187
Boyd, village	137	366	316	682	682	.....	.....	6	126
Holcombe	144	402	331	733	704	.....	29	7	174
Lafayette	291	1,127	1,031	2,158	2,158	.....	.....	11	268
Sampson	131	338	271	609	588	.....	21	7	104
Sigel	218	579	505	1,084	1,084	.....	.....	4	109
Cadott, village	176	394	366	760	760	.....	.....	21	140
Stanley, city:									
ward 1	131	361	340	701	701	.....	.....	.....	.....
ward 2	132	390	304	694	694	.....	.....	.....	.....
ward 3	84	363	211	574	574	.....	.....	.....	.....
ward 4	152	395	358	753	749	4	.....	.....	.....
Total, city..2,722								12	649
Tilden	251	748	671	1,419	1,419	.....	.....	2	275
Wheaton	461	1,047	886	1,933	1,933	.....	.....	9	395
Total	6,278	16,947	15,053	32,000	31,913	13	74	219	5,920

*6 Chinamen.

BLOOMER

Bloomer, Chippewa Co. Population, 1,046. An incorporated village located on the C., St. P., M. & O. Ry., 16 miles from Chippewa Falls, 26 miles from Eau Claire, 129 miles from Superior, 114 miles from St. Paul and 237 miles from Milwaukee. American Express. Telegraph and telephone connections. Good shipping facilities and passenger service.

Has an electric light plant, a bank, a drug store, 4 grocery stores, a hardware store, 3 general stores, 1 dry goods store, 1 jewelry store, tailor shop, 3 hotels, capacity 40 people, 2 boarding houses, a shoe store, graded public schools employing 7 teachers,

4 physicians, 2 dentists, 1 lawyer, 4 churches, 2 weekly newspapers, a brewery, 2 meat markets, 4 blacksmith shops, machine shop and foundry, large flour mill, 6 potato warehouses, starch factory, saw and planing mills, cigar factory, opera house and a creamery. The village has good streets covered with a mixture of sand and clay, and an abundance of shade trees. Has good business buildings and nice residences, a \$22,000 school house, and an opera house. Is in need of a first-class hotel. A canning factory, pickle salting station, woolen mill, glove factory or shoe factory, would be best suited to the needs of the village.

The water power in the village is all utilized, but there are two good water powers located a few miles away. Wood and coal are used for fuel. Wood is obtained from the farmers around the village and coal is shipped in. Plenty of help can be secured in the village and adjacent country to work the entire year. Such raw materials as fruit and vegetables can be supplied for canning purposes. The village can be supplied with clay, sand, stone and timber. Good location for a brick yard.

The surrounding country is good for farming purposes, and nearly all of the land suitable for crop raising is improved. The soil is a sandy loam, and is all level and free from stone. Is a fine live stock and dairy country and produces immense crops of potatoes, grain of all kinds, corn and tobacco.

BOYD

Boyd, Chippewa Co. Population, 62. Is an incorporated village located on the W. C. Ry., 126 miles from St. Paul, 21 miles from Chippewa Falls, 31 miles from Eau Claire and 247 miles from Milwaukee. National Express. Telegraph and telephone connections. Good shipping facilities and passenger service.

Has an electric light plant, a bank, drug store, 1 grocery, 4 hardware and 2 general stores, 3 hotels, a boarding house, high school employing 8 teachers, Catholic, German Lutheran and Methodist churches, 2 physicians, blacksmith shops, saw mills, a hoop shop, chair factory and a creamery. A weekly newspaper is published.

There is no water power here. Wood is used for fuel, supplied in large quantities from the surrounding country. Only a limited amount of help can be secured in the village and adjacent country. A canning factory can be supplied with vegetables. The village can be supplied with clay, timber and stone.

The country surrounding the village is good for farming pur-

poses, and less than 50 per cent of the land suitable for crop raising is improved. The soil is a clayey loam, sandy to the northward.

A woodenware factory or a factory using small timber would be best suited to the village.

CADOT

Cadott, Chippewa Co. Population, 760. An incorporated village located on the W. C. Ry., 12 miles from Chippewa Falls, the county seat, 22 miles from Eau Claire, 157 miles from Superior and 256 miles from Milwaukee. National Express. Telegraph and telephone connections. Good shipping facilities and passenger service.

The village has good streets and walks, nice shade trees, good business blocks, 2 banks, a drug store, 3 groceries, 2 hardware and 4 general stores, 2 hotels, high school employing 7 teachers, Catholic, Methodist, Presbyterian and German Lutheran churches, 2 physicians, a lawyer, opera house, saw mills, flour mill, and a creamery. A weekly newspaper is published. A first class hotel is needed. Good location for a canning factory.

There is a water power in the village not yet utilized, estimated at 500 horse power. Wood and coal are used for fuel. Wood is obtained from the adjacent country and coal from Chippewa Falls. Plenty of help can be secured in the village and surrounding country. Such raw materials as fruit and vegetables can be supplied in sufficient quantities for canning purposes. The village can be supplied with clay, stone and timber.

The country surrounding the village is good for farming purposes and only about one-third of the land suitable for crop raising is improved. The soil is a sandy loam and the land is level and free from stone. The country is fast developing and is taking high rank as a live stock and dairy section.

CHIPPEWA FALLS

Chippewa Falls, Chippewa Co. Population, 9,000. An incorporated city, located on the Chippewa river and on the C., M. & St. P., the C., St. P., M. & O., and the W. C. Rys., in the southwestern part of Chippewa county, of which it is the judicial seat, 10 miles from Eau Claire, 145 miles from Superior, 156 miles from Ashland, 105 miles from St. Paul, 247 miles from Milwaukee and 332 miles from Chicago. American, United States and National Express. Telegraph and telephone connections. Shipping facilities and passenger services the very best.

The city has, in addition to its other railway facilities, an interurban electric railway connecting it with Eau Claire, ten miles south, the cars running hourly between the two cities. Is supplied with gas and electric light plants, a complete sewerage system, an efficient and well equipped fire department, an electric

fire alarm system and water works. The supply of water for domestic use is obtained from springs located about two miles from the city. The city has 3 banking houses, is well supplied with retail stores carrying large stocks of goods, 2 wholesale grocery stores, a steam laundry, 8 hotels, excellent educational advantages, 12 churches representing all the leading religious denominations, 8 physicians and 10 lawyers. There are many fine business blocks and costly residences, good county buildings, a hospital with 120 beds, a free public library costing \$30,000. The new county insane asylum costing \$50,000 is located just outside of the city limits. The Home for the Feeble Minded, erected at a cost of \$450,000, is located three miles southeast of the city. The water power afforded by the Chippewa river presents unrivaled facilities for manufacturing enterprises. Duncan creek which empties into the Chippewa within the city limits, affords additional facilities for manufactories. Among the more prominent industries are the flouring mills, large grain elevators, sash, door and blind factories, foundry and machine shops, woolen mills, canning factory, 4 shoe factories, a large beet sugar factory, glove factory, shirt factory, 6 creameries, 5 cigar factories, planing mills and one of the largest lumber mills in the world. The general offices of a number of large lumbering companies are located here and large sums of money are distributed annually in wages, materially adding to the business of the city.

There is a large amount of land in the city suitable for business or manufacturing purposes. Free sites will be furnished to reliable parties and other inducements will be offered. The water power not utilized is estimated at from 10,000 to 15,000 h. p. Wood and coal are used for fuel. Another canning factory could be supplied with raw materials. There are large quantities of clay, sand, timber and stone in the immediate vicinity. Plenty of help can be secured to work the entire year.

The city is located in a good farming country and about 75 per cent of the land suitable for crop raising is improved. The soil is a sandy loam, level and free from stone. Dairying and stock raising are leading industries. The soil is adapted to diversified farming and a good quality of sugar beets and leaf tobacco are produced.

The city is in need of a first class hotel. Good location for factories using timber products.

NEW AUBURN.

New Auburn, Chippewa Co. Population, 356. An incorporated village, located on the C., St. P., M. & O. Ry., in the northwestern part of the county, 25 miles from Chippewa Falls, the county seat, 35 miles from Eau Claire, 120 miles from Superior, 131 miles from Ashland and 273 miles from Milwaukee. National Express. Telegraph and telephone connections. Good shipping facilities and passenger service.

The village is supplied with a bank, drug store, 1 grocery, 1 hardware and 5 general stores, 3 hotels, a boarding house, graded school employing 2 teachers, Baptist, Methodist and United Brethren churches, a physician, a lawyer, and a weekly newspaper.

Good location for a brick yard or canning factory.

There is no water power. Wood is used for fuel, obtained in large quantities from the surrounding country. A limited amount of help can be secured in the village and adjacent country to work the entire year. Such raw materials as vegetables and corn can be supplied for canning purposes. The natural products of the country are clay, sand, timber and stone.

The surrounding country is good for farming purposes, and about 75% of the land suitable for crop raising is improved. The soil is a clay loam and is mostly level and free from stone. The soil is very fertile and produces fine crops of hay, all kinds of grain and potatoes.

STANLEY.

Stanley, Chippewa Co. Population, 2,722. An incorporated city, located on the W. C. Ry., 24 miles from Chippewa Falls, the county seat, 34 miles from Eau Claire, 129 miles from St. Paul and 244 miles from Milwaukee. National Express. Telegraph and telephone connections. Good shipping facilities and passenger service.

The city has good water works and sewerage system, electric light plant, good streets, fine shade trees, a public park, free public library, city hall and opera house, 2 banks, 2 drug stores, a full complement of grocery, dry goods and hardware stores, a laundry, good hotels, a number of boarding houses, splendid high and graded schools, 18 teachers employed, 4 physicians, 4 lawyers, churches of the leading religious denominations, a tannery, saw mills, flour mills and a creamery. A weekly newspaper is published.

The city has special inducements to offer manufacturing enterprises requiring large quantities of maple, oak, birch and basswood timber. Also clay suitable for brick or tile. Excellent location for machine shops.

Wood is used for fuel obtained from the mills in the city and the adjacent forests. An abundance of help can be secured in the city and surrounding country to work the entire year. Vegetables can be supplied for canning purposes. The city can be supplied with stone, timber of all kinds, bark, clay and sand suitable for the manufacture of brick, tile, sewer pipe and various other clay products.

The country surrounding the city is good for farming purposes and only about 10% of the land suitable for crop raising is improved. The land is rolling and free from stone, excepting some surface rocks scattered over a portion of it. This section is unequalled as a grass country, and dairying and sheep raising are fast becoming important industries. Cheese factories and creameries are numerous in every direction.

CLARK COUNTY.

Clark county is located in the west central part of the state. It has an area of 1,200 square miles. Its population in 1905 was 29,344, a gain of 3,496 over 1900. One-fifth of the population is of foreign birth, of which number about one half are Germans. There are also a large number of Poles, Norwegians and Canadians. The soil covering all of the county with the exception of the southern and nearly all of the western part is a loamy clay uniform in texture and composition. The land is gently sloping and well drained. There is considerable hardwood and hemlock in the county; the pine which was once plentiful having been cut away. Every acre of this land can be used for farming and with the abundant grass and clover crops it appears that dairying and stock raising are destined to become the chief sources of farm income. In the southern and western part this soil shades into a warm sandy loam with a gently rolling surface dotted occasionally by sandstone hills and mounds. This land is rather low but its drainage is good. The pine which covered this has been entirely cut. This sandy loam in turn shades into a light loamy sand, with a sloping surface, dotted with mounds of sandstone, varying from mere swells to rugged pinacles of considerable height. The pine has been entirely cut from this district. Because of its porous nature this soil is not as productive as the loamy clay, but corn and potatoes can be raised with suc-

cess. There is no swamp land in the county. About 352,000 acres have been occupied for farms of which amount 130,000 acres are improved. The value of the farms including buildings is \$12,750,000. The acreage of the principal crops in 1890 and 1905 is as follows:

	Acreage in 1890.	Acreage in 1905.
Hay	28,550	49,256
Wheat	2,662	2,383
Corn	2,629	3,440
Oats	10,870	27,244
Barley	232	2,453
Rye	712	1,509

In 1905 there were 26 cheese factories and 26 creameries in the county. The price of wild and unimproved lands which can be made tillable is from \$8 to \$20 per acre. Improved land ranges in price from \$20 to \$75 per acre, according to location and improvements. Neillsville is the county seat. The table on the opposite page shows the population of towns, cities and villages for 1905.

ABBOTSFORD.

Abbotsford, Clark Co. Population, 893 within the corporation and about 500 just outside in Marathon Co. This village is located on the W. C. Ry., 214 miles from Milwaukee, 19 miles from St. Paul, 54 miles from Chippewa Falls and 65 miles from Eau Claire. Eight daily passenger trains. Telegraph and telephone connections. National Express. Good freight facilities.

Steam power is used. The surrounding country has a plentiful supply of wood for fuel. Coal is also shipped in from Illinois. One hundred and fifty men and one hundred women could be procured to work in factories. It supports 1 bank, 1 drug store, 4 groceries, 1 hardware store, 1 department store, 1 dry goods store and 1 laundry. It also has 3 physicians, 1 lawyer, a high school employing 8 teachers, 2 hotels and 3 boarding houses.

The village is in need of a vegetable and fruit canning establishment, an electric light plant and a good flouring and feed mill.

The soil of the surrounding country is a clayey loam, land is rolling, free from stone and swamps; can all be utilized for general farming purposes.

CLARK COUNTY.

TOWNS, CITIES AND VILLAGES.	Families.	AGGREGATE POPULATION.			COLOR.			Ex-soldiers and sailors.	Militia.
		Male.	Female.	Total.	White.	Colored.	Indian.		
Beaver	146	383	338	721	721	.....	.....	5	146
Colby	142	418	249	767	767	.....	.....	2	146
*Colby, city	141	296	288	584	584	.....	.....	8	113
Dewhurst	46	111	104	215	215	.....	.....	.....	40
Eaton	148	387	299	686	685	.....	1	4	134
Greenwood, city	165	341	346	687	687	.....	.....	12	127
Fremont	190	455	419	874	874	.....	.....	4	177
Grant	247	711	582	1,293	1,292	1	.....	11	268
Green Grove	81	251	206	457	457	.....	.....	1	98
Hewett	64	156	131	287	287	.....	.....	5	50
Hixon	119	351	294	645	645	.....	.....	.....	116
Owen, village	64	198	137	335	335	.....	.....	.....	107
Withee, village	97	212	194	406	406	.....	.....	2	110
Hoard	142	328	285	613	613	.....	.....	3	113
Levis	110	302	255	557	557	.....	.....	3	88
Loyal	190	497	430	927	927	.....	.....	14	175
Loyal, village	192	396	419	815	815	.....	.....	12	137
Lynn	148	359	374	733	733	.....	.....	2	116
Longwood	117	304	246	550	550	.....	.....	4	107
Mayville	216	624	543	1,167	1,167	.....	.....	4	194
Abbotsford, village....	146	459	434	893	893	.....	.....	3	227
Dorchester, village ...	102	238	225	463	463	.....	.....	5	87
Mead	21	71	66	137	137	.....	.....	1	17
Mentor	226	525	482	1,007	1,007	.....	.....	9	150
Neillsville, city:									
ward 1	166	314	364	678	678	.....	.....	.....	.....
ward 2	151	330	347	677	677	.....	.....	.....	.....
ward 3	189	372	390	762	762	.....	.....	.....	.....
Total, city	2,117							42	235
Pine Valley	219	619	516	1,135	1,125	.....	.....	9	183
Reseburg	149	418	330	748	748	.....	.....	2	124
Sherman	127	366	377	673	673	.....	.....	5	149
Self	39	95	91	186	186	.....	.....	.....	32
Sherwood	57	143	149	292	292	.....	.....	6	41
Thorp	215	662	596	1,258	1,258	.....	.....	7	212
Thorp, village	195	435	443	878	878	.....	.....	14	154
Unity	182	471	439	910	910	.....	.....	13	154
Warner	143	422	339	761	752	8	1	7	142
Washburn	96	254	214	468	468	.....	.....	6	36
Weston	162	444	385	829	818	.....	11	8	151
Withee	218	668	615	1,283	1,283	.....	.....	1	197
Worden	179	479	427	906	906	.....	.....	3	132
York	248	586	495	1,081	1,081	.....	.....	3	207
Total	5,995	15,451	13,893	29,344	29,322	9	13	240	5,302

*Part in Marathon county; total for city 849.

COLBY.*

Colby, Clark Co. Population, 849. An incorporated city, located on the W. C. Ry., 211 miles from Milwaukee, 19 miles from Marshfield, 162 miles from St. Paul, 57 miles from Chippewa Falls and 68 miles from Eau Claire. It has six daily passenger trains; good freight facilities. Telegraph and telephone connections. National express.

Plenty of help could be secured in the city and surrounding country. The farms of the surrounding country can supply fruit and vegetables for canning establishments. Clay, timber

†584 inhabitants in Clark Co., 288 in Marathon Co.

and stone can be furnished industries using these products as raw materials. The surrounding country furnishes an abundance of wood for fuel. The city has electric light plant, 1 bank, 1 drug store, 5 groceries, 2 hardware stores, 5 general stores, 3 blacksmith and wagon shops, stave and heading mill and 2 saw mills. The city has 2 physicians, and 2 attorneys at law; a high school employing 7 teachers; has 4 hotels and wants another.

The surrounding country is nearly all suitable for general farming, only one-third of which is improved. The soil is a clayey loam, free from stone and sand, is level and not swampy.

COLUMBIA.

Columbia, Clark Co. Population, about 100. Not incorporated. Located on the C., St. P., M. & O. Ry. Has good passenger and freight services. Telegraph and telephone connections. American Express. Is 31 miles from Marshfield, 140 miles from St. Paul and 230 miles from Milwaukee.

About 100 horse water power can easily be developed. Such raw materials as berries, vegetables, stone, sand and clay can be supplied. It has 1 hardware and 1 general store, a graded school of 2 departments and 1 boarding house. About one-eighth of the surrounding country is rough, one-eighth stony, one-eighth swampy, one-fourth sandy with clay subsoil.

CURTISS.

Village of Curtiss, Clark Co. Population, 300. Unincorporated. Located on W. C. Ry., 7 miles west of Abbotsford, 313 from Chicago, 220 from Milwaukee, 168 miles from Manitowoc. Telegraph and telephone connections. Eight daily trains. Good facilities for receipt and shipment of freight. National Express.

Steam power would have to be used here as there is no water power to develop. The surrounding country can furnish plenty of wood for fuel and for any industry in which wood is used as a raw material; also sand and clay. Plenty of help can be secured. No electric light plant, 1 general store, 1 hardware store, 3 groceries, no drug store, no physicians, has a 2 department graded school, a first class hotel; surrounding country level, free from stone, best of soil and nearly all is suitable for general farming.



CREAMERY NEAR MEDFORD, WIS.

GRANTON.

Village of Granton, Clark Co. Population, 400. Unincorporated. Located 15 miles from Marshfield, 155 miles from St. Paul, 235 miles from Milwaukee. On the C., St. P., M. & O. Ry. Telegraph and telephone connections. Good freight and passenger facilities; six trains daily. American Express.

No water power; abundance of wood for fuel and manufacturing purposes; good location for a vegetable or fruit canning establishment; good clay and sand banks near by; also stone quarry; any amount of help can be secured; no electric light plant; has 1 drug store, 1 grocery store, 3 hardware stores, 2 department stores, 2 laundries, harness shop, shoe repair shop, creamery, retail lumber yard, bakery, ice house, newspaper, 2 hotels, 4 boarding houses, stock yard and 2 grain warehouses. The village has 1 physician, no lawyers; it has a graded school employing 3 teachers.

The country surrounding the village is rolling, three-fourths of which is suitable for a general farming. It is free from stone, sand and swamp, is a clayey loam; is splendid for dairying purposes.

GREENWOOD.

Greenwood, Clark Co. Population, 687. Located near the center of Clark county at the junction of the W. C. and the P. & N. W. Rys. Fairly good freight and passenger services. American and National Express. Is 24 miles from Marshfield, 215 miles from Milwaukee and 204 miles from St. Paul.

The developed water-power is estimated at 300 H. P. or less. Wood is the principal fuel, being obtained in the adjacent country. Such raw materials as fruit, vegetables, clay, sand, timber and stone can be supplied. Two-hundred laborers can be procured. The city needs a woven-wire factory of some kind. An electric light plant is being installed. The city affords 1 bank, 1 drug store, 5 groceries, 3 hardware stores, 1 department store, 4 dry-good stores, 3 physicians, 1 lawyer, a high school employing 5 teachers, 1 hotel, 3 boarding houses. An opportunity is afforded for another first-class hotel and a laundry. The surrounding country is level, the land being free from stone, swamps and sand. The soil is very fertile, and dairying is fast becoming the leading occupation of the farmer.

HUMBIRD.

Humbird, Clark Co. Population, 400. Unincorporated. Located on the C., St. P., M. & O. Ry., 126 miles from St. Paul, 38 miles from Eau Claire and 228 miles from Milwaukee. Excellent freight and passenger accommodations. American Express.

The village has a limited supply of undeveloped water power; coal from Illinois or the east is shipped in for fuel; clay, sand,

stone and vegetables can be supplied for manufacturing purposes. A salting station for pickles can be supported here; also an electric light plant, a good hotel and a number of private families to take in summer boarders. The village already has 1 bank, a creamery, a cheese factory, 1 drug store, 3 grocery stores, 2 dry-good stores, 1 laundry, 1 furniture store, 1 flour and feed store; one lumber yard, 1 potato and 1 grain ware house, and 1 meat market. It has a high school furnishing employment for 5 teachers; has two doctors.

About 90% of the land north, south and west is improved, about 40% east is improved. The land is more or less rolling but nearly all good for general farming. Trout streams abound in the surrounding country. Dairying is becoming the leading occupation of the farmers.

LOYAL.

Loyal, Clark Co. Population, 815. A thriving little village located on the W. C. Ry., 17 miles from Marshfield, 209 miles from Milwaukee and 197 miles from St. Paul. One passenger and mixed train each way daily. National Express. Poor freight and passenger accommodations.

There is no water power. Plenty of wood for fuel can be had from the surrounding country. The surrounding forest furnish large quantities of bolt timber. The sugar beet industry is rapidly coming to the front, and with better freight facilities capital could very profitably be invested in a small sugar factory. The village has an electric light plant, telegraph communications, but no telephone system. It has 1 bank, 1 drug store, 4 grocery stores, 2 hardware stores, 4 general stores, 2 stave and heading mills, 1 shingle and saw mill, and no laundry. The village supports 3 physicians, 1 lawyer, a high school employing 7 teachers, 2 good hotels, and is surrounded by fairly thickly settled, level country.

The soil is rich, free from stone and sand, very little of which is swampy.

NEILLSVILLE.

Neillsville, county seat of Clark Co. Population in 1905, 2,117. Located on the C. St. P., M. & O. Ry., 25 miles from Marshfield, 145 miles from St. Paul and 225 miles from Milwaukee. Six passenger trains daily. American Express. Good freight facilities.

Has a 300 horse water-power not yet utilized; wood is shipped in from Illinois; a large building formerly used as a washboard factory can be purchased at a very reasonable price for a vege-

table canning or pickle factory; an almost unlimited supply of good hard sandstone and granite can be quarried near the city, the latter being suitable for grave stones; plenty of help can be secured the entire year and about 100 persons between the ages of 14 and 16 years could be secured during vacation to work in a canning factory or pickling establishment. The city affords 7 physicians, 11 lawyers, and 14 teachers. It has a high school building costing \$35,000 and 2 ward schools. It also has 4 good hotels, and 2 boarding houses.

Neillsville has 2 banks, 4 drug stores, 4 groceries, 1 hardware store, 4 department stores, 1 general store, 1 laundry, 1 flour and feed store, 2 meat markets, 1 general repair shop, and 4 shoe shops.

About one-half the land of the surrounding country is suitable for farming purposes, a little rough, nearly free from stone, has but little swampy land, and some sandy soil south of town.

Neillsville was founded about fifty-six years ago, then in the heart of the lumber industry of the state. Since cutting away the timber dairying has rapidly developed. The city has about two miles of paved streets, two small parks, and many fine residences.

OWEN.

Owen, Clark Co. Population, 375. Newly incorporated. Located at the junction of the W. C. and the F. & N. E. Rys., in the northern part of Clark county. Good freight and passenger service. Is 226 miles from Milwaukee, 147 miles from St. Paul, 42 miles from Chippewa Falls and 53 miles from Eau Claire. American and National Express. Two other lines of railroad are being built.

In this village there is a good opening for a brick yard, stave and heading mill, excelsior factory, hub and spoke factory, a creamery and cheese factory. Sites for any of these can be procured at a nominal figure. Steam power would have to be used. The surrounding country furnishes an abundance of wood for fuel. Help is plentiful. Good wells furnish water for household purposes. An electric light plant is soon to be installed, and a bank is about to be opened up. The village affords 1 drug store, 1 grocery store, 1 hardware, 1 department store, 1 furniture store 2 meat markets. 1 clothing store and a lumber mill furnishing employment for about 250 men. The village has 2 physicians a graded school of three departments. 1 hotel and another is being built, and a sewage system is un-

der construction. The land surrounding the village is most excellent for farming purposes, about one-tenth of which is under cultivation. It is comparatively free of stone, is level, with but little low land, and no sand; soil is clayey loam.

THORP.

Thorp, Clark Co. Population, 878. Incorporated village. Located in the northwestern corner of Clark county on the W. C. Ry., 135 miles from St. Paul, 30 miles from Chippewa Falls, 41 miles from Eau Claire and 237 miles from Milwaukee. National Express. Good freight and passenger facilities.

Steam power would have to be used. Wood for fuel can be procured near by. Such raw materials as vegetables, berries of all kinds, clay, sand, stone, and timber can be supplied. A canning factory, and a wood working establishment are needed. The village is supplied with an electric plant, telephone system, 1 bank, 2 drug stores, 6 grocery stores, 2 hardware stores, 4 general stores, 3 mills, a stave and heading factory, 1 creamery, a cheese factory, grain elevator and warehouse. It also supports 3 physicians, 2 lawyers, a high school employing 8 teachers; it has 2 boarding houses. A first-class hotel is needed.

The surrounding country is most suitable for dairying and stock raising, lumbering and general farming. The soil is a heavy loam with clay and gravily sub-soil; two-thirds of the out-lying territory is covered with timber, such as birch, maple, basswood, elm, ash, red and white oak.

COLUMBIA COUNTY.

Columbia county is located in the south-central part of the state. The area is 776 square miles, with a population in 1905 of 31,192, a slight gain over 1900. Of this population 5,693 are foreign born, of which number over half are Germans. The farm area is 456,326 acres, which represents practically all the tillable land in the county, and together with the improvements in 1905 was valued at \$20,755,992. While the farm acreage in 1890 was nearly the same the valuation at that time was but \$12,146,891, showing an increase in value of \$8,609,101 during the 15 years, or 70%. The soil of the county is very diversified both as to quality and kind. The soil covering the north-west half of the county is sandy loam with a

considerable amount of marsh land, the latter being in the river valleys, especially along the Fox River, and of largest area in the northern part. The sandy soil of Adams county adjoining Columbia county on the north extends down into the latter for several miles. In the eastern and southern part of the county the soil is generally a clayey loam of the lighter variety shading into prairie loams at the south. There is also some prairie loam in the northeastern part of the county. The principal crops and their acreage in 1890 and 1905 were as follows.

	Acreage in 1890.	Acreage in 1905.
Wheat	21,447	2,963
Corn	44,819	61,367
Oats	46,903	62,041
Barley	23,149	11,967
Rye	10,141	10,623
Hay	58,745	51,651
Tobacco	504	2,442
Potatoes	3,876	8,532

The county occupies a foremost position in sheep-raising and woolgrowing. There are 9 cheese factories and 18 creameries in the county. For the poor and unimproved land the price ranges from \$10 to \$40 per acre, but for the improved land the average price is about \$80, although there are frequent sales at over \$120 per acre. Portage is the county seat. The population of the local divisions of the county for 1905 is given on the following page.

COLUMBUS.

Columbus, Columbia Co. Population, 238. Is an incorporated city located on the C., M. & St. P. Ry., 28 miles from Portage, the county seat, 56 miles from Madison, 65 miles from Malwaukee and 150 miles from Chicago. United States Express, Telegraph and telephone connections. Good shipping facilities and passenger service.

Columbus was settled in 1840. It has paved streets, an abundance of large shade trees, substantial business blocks and beautiful residences, is lighted by electricity, has 2 banking houses, a full line of mercantile houses, 3 hotels, a number of boarding houses, high and graded public schools employing 20 teachers, 10 churches representing all the leading religious denominations, 4 physicians, 4 lawyers, city hall and an opera house, a public library, canning factory, 2 breweries, a malt

COLUMBIA COUNTY.

TOWNS, CITIES AND VILLAGES.	Families.	AGGREGATE POPULATION.			COLOR.			Ex-soldiers and sailors.	Militia.
		Male.	Female.	Total.	White.	Colored.	Indians.		
Arlington	164	432	361	793	792	1	.....	1	192
Caledonia	215	601	539	1,140	1,140	.....	.....	4	222
Columbus	161	395	355	750	750	.....	.....	2	177
Columbus, city:									
ward 1.....	260	394	511	905	904	1	.....	4	128
ward 2.....	188	327	357	684	684	.....	.....	6	1.9
ward 3.....	223	379	420	799	799	.....	.....	6	132
Total, city..2,388									
Courtland	181	447	368	815	814	1	.....	4	176
Cambria, village	204	319	359	678	678	.....	.....	6	115
Dekorra	189	465	396	861	861	.....	.....	8	132
Poynette, village	184	317	346	663	663	.....	.....	19	112
Ft. Winnebago	128	322	264	586	586	.....	.....	5	107
Fountain Prairie	214	541	489	1,030	1,030	.....	.....	1	202
Fall River, village.....	97	180	189	369	369	.....	.....	15	63
Hampden	173	471	368	839	839	.....	.....	3	184
Lecds	222	587	581	1,168	1,168	.....	.....	2	238
Lewiston	192	492	390	882	882	.....	.....	15	152
Lodi	156	388	329	717	712	.....	5	7	136
Lodi, village	311	490	606	1,096	1,096	.....	.....	22	167
Lowville	148	422	390	812	812	.....	.....	3	191
Marcellon	175	450	397	847	847	.....	.....	16	154
Newport	120	316	288	604	604	.....	.....	4	102
Kilbourn City, village	302	525	566	1,091	1,090	*1	.....	32	179
Otsego	254	625	568	1,193	1,193	.....	.....	4	213
Rio, village	183	306	315	621	621	.....	.....	8	126
Pacific	59	148	128	276	276	.....	.....	4	51
Portage, city:									
ward 1.....	150	311	308	619	619	.....	.....	.....	116
ward 2.....	266	515	571	1,086	1,082	4	.....	.....	191
ward 3.....	247	379	484	863	859	†3	1	.....	150
ward 4.....	329	64	729	1,333	1,332	1	.....	.....	275
ward 5.....	364	780	843	1,623	1,622	1	.....	.....	282
Total, city..5,524								62	
Randolph	198	523	481	1,004	1,004	.....	.....	.....	179
†Randolph, vil., west									
ward	68	103	112	215	215	.....	.....	1	40
Scott	156	425	343	768	768	.....	.....	2	168
Springvale	149	408	322	730	730	.....	.....	1	165
West Point	153	369	339	708	707	1	.....	7	155
Wyocena	242	608	550	1,158	1,158	.....	.....	15	183
Pardeeville, village ..	244	409	457	866	866	.....	.....	24	120
Total	7,269	15,773	15,419	31,192	31,172	14	6	313	5,874

†East ward in Dodge county.

*1 Chinaman.

†3 Chinamen.

house, grain elevators etc. Two English and one German newspapers are published. A first class hotel is needed.

There is a small water power in the city. Coal is used for fuel, obtained from Milwaukee and Chicago. Plenty of help can be secured in the city and surrounding country to work the entire year.

Such raw materials as fruit and vegetables can be supplied for canning purposes.

The city is surrounded by a rich agricultural section and 75

per cent of the land suitable for crop raising is improved. All of the land is level and free from stone and the soil is very productive.

FALL RIVER.

Fall River, Columbia Co. Population, 369. An incorporated village located on the C. M. & St. P. Ry., 25 miles from Portage, 62 miles from Madison, 68 miles from Milwaukee and 153 miles from Chicago. United States Express. Telegraph and telephone connections. Good shipping facilities and passenger service.

Help can be secured for factory work. The village is supplied with a bank, drug store, 2 groceries, 1 hardware and 2 general stores, graded public school employing 3 teachers, Baptist and Methodist Episcopal churches, 1 hotel, 2 boarding houses, a physician, bakery, grain elevator, lumber yard, 3 potato warehouses, grist mill and a creamery. A first-class hotel is needed.

Wood and coal are used for fuel. Wood is obtained from the adjoining country and coal from Milwaukee and Chicago. Vegetables and perhaps other raw material can be furnished for canning purposes.

The surrounding country is a rich agricultural section and all the land suitable for crop raising is improved. There is but very little stone; about 5% of the soil is sandy and 85% level and free from stone.

KILBOURN CITY.

Kilbourn City, Columbia Co. Population, 1,091. A village on the C. M. & St. P. Ry., and Wisconsin river, 17 miles from Portage, the judicial seat, 108 from La Crosse, 54 from Madison, 110 from Milwaukee and 195 from Chicago. United States Express. Telegraph and telephone connections. Good shipping facilities and passenger service.

Has an electric light plant, 1 bank, 2 drug stores, 7 grocery stores, 2 hardware stores, 2 department stores, 4 dry goods stores, shoe store, laundry, high school employing 7 teachers, 5 hotels able to accommodate 250 persons, 5 boarding houses with a capacity for 150 boarders, 2 lawyers, 7 physicians, 7 churches, 3 weekly newspapers. Has no gas plant or electric railway connections.

Wisconsin river furnishes an abundance of water power for manufacturing purposes, there being 5000 H. P. not yet utilized. Wood and Coal are used for fuel. Wood is obtained from the adjacent county and coal is obtained from Milwaukee and Chicago. Plenty of help can be secured in the city and surrounding country to work the entire year. The country can supply such raw materials as fruit and vegetables for canning and the village can be supplied with clay, sand, peat, stone and timber.

Kilbourn is beautifully situated at the Dells of the Wisconsin river and is a favorite summer resort for tourists and pleasure seekers. Has beautiful shady streets, substantial business blocks, and many fine residences. Stage daily to Baraboo and Friendship. The village is in need of a first class summer hotel. A canning factory would be best suited to the needs of the village at the present time. A paper mill would be a good investment if the water power is utilized.

The country surrounding the village is good for farming purposes, and from 50 to 60% of the land suitable for crop raising is improved. The soil is a light, sandy loam. About 20% of the land is rough, principally along the Wisconsin river; a very small part is swampy and the greater part is level and free from stone.

LODI.

Village of Lodi, Columbia Co. Population, 1,096. On the C. & N. W. Ry., 19 miles from Madison, 102 miles from Milwaukee and 149 miles from Chicago. American Express. Telegraph and telephone connections. Good shipping facilities and passenger service.

Has an electric light plant, 2 banks, 2 drug stores, 1 grocery store, 4 hardware stores, 3 dry goods stores, 1 laundry, 2 hotels capable of accommodating 80 people, 3 boarding houses, 3 physicians, 2 lawyers, good schools employing 10 teachers, 2 furniture stores, 2 music stores, 6 restaurants, bakery, jewelry store, cold storage, 3 blacksmith shops, 2 meat markets, a tobacco warehouse, 5 churches and a weekly newspaper.

Wood and coal are used for fuel; wood is obtained from farmers in the surrounding country and coal is shipped in. Considerable help can be secured in the village and adjacent country to work the entire year. Raw materials such as fruit, vegetables and corn can be furnished for canning. The natural products of the country are clay, sand, timber and stone.

A shoe factory and a canning factory are needed.

The surrounding country is good for farming purposes, and about 75% of the land suitable for crop raising is improved. One-fourth of the land is rough, one-eighth swampy, one-eighth sandy and the remainder is level and free from stone. The soil is fertile, making this an important agricultural and stock raising section.

PARDEEVILLE.

Pardeeville, Columbia Co. Population, 866. A village on the C. M. & St. P. Ry., and on the Fox river, 9 miles from Portage, 46 miles from Madison, 89 miles from Milwaukee and 174 miles from Chicago. United States Express, telegraph and telephone connections. Good shipping facilities and passenger service.

Has an electric light plant, 1 bank, 2 drug stores, 6 grocery stores, 1 hardware store, 1 department store, 3 dry goods stores, 1 laundry, a graded public school employing 8 teachers, 3 hotels with a total capacity for 150 guests, 2 physicians, 5 churches, a weekly newspaper, 3 potato warehouses, 1 commission merchant handling poultry and eggs, furniture store and a farm implement store.

Wood and coal are used for fuel. The Fox river at this point affords good water power for manufacturing purposes and there are 200 or 300 horse power, not yet utilized. Plenty of help can be secured in the village and surrounding country to work the entire year. Such raw materials as fruit and vegetables can be furnished for canning. The natural products of the country are clay, sand, peat, stone and timber. Great beds of marl are located near the village. A first-class hotel is needed.

The country surrounding the village is good for farming purposes and the land suitable for crop raising is nearly all improved. The soil is admirably adapted to the production of cucumbers.

PORTAGE.

Portage, Columbia Co. Population, 5,524. Is an incorporated city located on the C. M. & St. P. and the W. C. Rys., in the northwestern part of Columbia county, of which it is the judicial seat, 37 miles from Madison, 93 miles from Milwaukee and 178 miles from Chicago. United States and National Express. Telegraph and telephone connections. Excellent shipping facilities and passenger service.

The site of the city was known as the Portage at a very early day, and was used by the Indians and others to convey the canoes and boats from one river to the other. A government canal now connects the Fox and Wisconsin rivers at this point. The city is supplied with a good system of water works, is lighted by electricity, has a well equipped fire department, paved streets, nice shade trees, public parks, shady drives, and good public buildings. Has 2 banks, 3 drug stores, groceries, hardware, dry goods and clothing stores, a laundry, 6 hotels, 3 boarding houses, fine educational advantages, 10 churches representing the leading religious denomi-

nations, 8 physicians, 6 lawyers, 2 restaurants, 3 bakeries, 2 harness shops, 2 wagon repair shops, underwear factory, hosiery factory, sash, door and blind factory, foundry, tobacco warehouse, pickle salting station, and a flour mill. Two daily and 3 weekly newspapers are published.

Steam power is used. Coal and wood are used for fuel. Wood is obtained from the adjacent country and coal from Milwaukee. Fruit and vegetables can be supplied for canning. The city can be supplied with clay, sand, timber and stone. Almost any amount of help can be secured in the city and adjacent country. There are large deposits of glass sand and marl in the immediate vicinity.

Some parts of the surrounding country are good for agricultural purposes, especially the high lands. The low lands are marshy and are used largely as grass lands. The soil is a sandy loam and the land is mostly level and free from stone.

POYNETTE.

Poynette, Columbia Co. Population, 663. An incorporated village located on the Madison branch of the C. M. & St. P. Ry., 12 miles from Portage, 25 miles from Madison, 107 miles from Milwaukee and 192 miles from Chicago. United States Express. Telegraph and telephone connections. Good shipping facilities and passenger service.

The village has a bank, 2 drug stores, 1 grocery, 2 hardware and 3 general stores, 2 millinery stores, 2 hotels, high school employing 6 teachers, Methodist and Presbyterian churches and a Presbyterian academy, 3 physicians, 1 lawyer, furniture store, meat markets, blacksmith shops, etc. A weekly newspaper is published. A first-class hotel is needed.

Wood and coal are used for fuel. Some wood is obtained from the surrounding country, and coal is shipped in. There is no water power. A limited amount of help could be secured in the village and adjacent country. Good location for a canning factory.

The surrounding country is good for farming purposes and about two-thirds of the land suitable for crop raising is improved. The country north of the village is rough, soil stony and sandy. South and east is hilly, soil black loam, all stony.

RANDOLPH.

Village of Randolph, Columbia Co. Population, 818.* On the C. M. & St. P. Ry., in Columbia and Dodge counties, 24 miles from Portage, 61 miles from Madison, 74 miles from Milwaukee and 139 miles from Chicago. United States Express. Telegraph and telephone connections.

Has a bank, 2 drug stores, 6 grocery stores, 3 hardware stores, 5 dry goods stores, high school employing 6 teachers, 2 physicians, 1 lawyer, 1 hotel, 1 boarding house, 4 churches, a weekly newspaper, canning factory, roller flour mill, wagon shop and blacksmith shop.

Wood is used for fuel and is obtained from the adjacent country. Considerable help can be obtained in the village and surrounding country. Vegetables can be supplied for canning purposes. The village can be supplied with sand, peat, timber and stone. Is in need of a first-class hotel, and a creamery or cheese factory.

The country surrounding the village is good for farming purposes, and the land suitable for crop raising is nearly all improved.

RIO.

Rio, Columbia Co. Population, 621. An incorporated village on the C., M. & St. P. Ry., 14 miles from Portage, the county seat, 51 miles from Madison, 79 miles from Milwaukee and 164 miles from Chicago. United States Express. Telegraph and telephone connections. Good shipping facilities and passenger service.

Has electric lights, a bank, 2 drug stores, 1 grocery, 2 hardware stores and 2 general stores, graded public school employing 4 teachers, 2 churches, 2 physicians, a lawyer, 2 hotels, 2 grain elevators, meat market, blacksmith shop, harness shop, furniture store, tobacco warehouse, and a livery barn. Two weekly newspapers are published.

Wood and coal are used for fuel. Wood is obtained from adjacent country and coal from Milwaukee. Help can be secured in the village and surrounding country to work the entire year.

The village is in need of a first class hotel and a canning factory.

The surrounding country is good for farming purposes and all of the land suitable for crop raising is improved. The character of the soil is about 10 per cent rough, 40 per cent sandy and 50 per cent level and free from stone. The principal farm products are **grain**, live stock, potatoes and leaf tobacco. Large shipments

*215 in Columbia Co. and 603 in Dodge Co.

of leaf tobacco are made from the village each year, and many car loads of potatoes and beans are marketed there. From 30 to 50 women and girls are employed at cleaning or hand picking beans.

WYOCENA.

Wyocena, Columbia Co. Population, 400. An unincorporated village located on the C. M. & St. P. Ry., 7 miles from Portage, the county seat and banking point, 46 miles from Madison, 84 miles from Milwaukee and 196 miles from Chicago. United States Express. Telegraph and telephone connections. Good shipping facilities and passenger service.

The village is supplied with electric lights, shade trees, cement walks, a drug store, 1 grocery, and 2 general stores, laundry, one hotel, graded public school employing 4 teachers, Baptist and Congregational churches, a physician, village hall, grain and potato warehouses, and a lumber yard. The county insane asylum and almshouse are located near the village.

Is in need of a first class hotel. Good location for a canning factory.

A limited amount of help can be obtained in the village and adjacent country. A canning factory can be supplied with vegetables. The village can be supplied with clay, sand, stone, timber, peat and marl.

The country surrounding the village is good for farming purposes and about 80 per cent of the land suitable for crop raising is improved. About 20 per cent of the land is marshy.

CRAWFORD COUNTY.

Crawford county is located in the southwestern part of the state on the Mississippi and Wisconsin rivers. The area is 557 square miles. The population is 1905 was 16,926, of which number 2,392 were foreign born. The principal nationalities represented and their order are as follows: Norwegians, Bohemians and Germans. The farm acreage in 1905 was 329,363 acres, of which 139,180 acres were improved land. The value of the farms and improvements was \$6,979,206. In 1890 there were 286,443 acres in farms worth, including improvements, \$2,927,300. The soil in the eastern part of the county from the Kickapoo river to the boundary, is a clayey loam of the medium and heavier varieties well adapted to general farming. In the western part along the Mississippi river and in the southern

part along the Wisconsin river the soil is mainly a sandy loam. The central part of the county between the sandy loam and Kickapoo river is covered with a light variety of clayey loam. There is some swampy land along the Wisconsin river. The land is quite generally broken up into ridges and hills, leaving a rather rough and irregular surface. Some of the hills rise to a height of several hundred feet above the surrounding land. The principal crops and acreage in 1890 and 1905 were as follows:

	Acreage in 1890.	Acreage in 1905.
Wheat	12,807	3,806
Oats	26,097	26,156
Barley	903	1,986
Corn	18,152	21,333
Hay	25,100	33,398

Barley, clover seed and timothy seed are also important crops. Wool-growing is an important source of farm income. The county possesses 15 cheese factories and 11 creameries. The price for unimproved land ranges from \$5 upward, depending upon location and the quality of soil. The sales of improved farm lands indicate a range in prices of from \$30 to \$100 per acre. Prairie du Chien is the largest city and county seat. The table on the following page shows the population of the cities, villages and towns in the county for 1905.

BRIDGEPORT.

Bridgeport, Crawford Co. Population, 200. Not incorporated. On the C. M. & St. P. Ry., 7 miles from Prairie du Chien, the county seat, and the nearest banking point, 66 miles from La Crosse, 60 from Dubuque, 91 from Madison, 173 from Milwaukee and 250 from Chicago. United States Express.

Has 1 general store and 1 flour and feed store, hotel, public school employing 1 teacher, 3 churches; stage daily to Patch Grove and Bloomington.

Wood and coal are used for fuel; the former is obtained from the country surrounding the village and the latter is shipped in. There is a small water power not developed. A limited amount of help can be secured in the village and surrounding country. Such raw material as fruit, and vegetables could be furnished for canning. The natural products are clay, sand, timber and stone.

CRAWFORD COUNTY.

TOWNS, CITIES AND VILLAGES.	Families.	AGGREGATE POPULATION.			COLOR.			Ex-soldiers and sailors.	Militia.
		Male.	Female.	Total.	White.	Colored.	Indians.		
Bridgeport	66	185	167	342	342	.....	1	78
Clayton	213	866	783	1,599	1,599	.....	22	278
Gays Mills, village.....	95	211	216	427	427	.....	11	92
Soldiers Grove, village.....	29	399	323	718	713	.....	9	132
Eastman	273	744	657	1,401	1,401	.....	9	275
Freeman	17	78	684	1,482	1,482	.....	12	27
*De Soto, village	49	35	45	80	80	.....	1	10
Hauy	151	386	329	715	715	.....	11	121
Bell Center, village.....	49	126	114	240	240	.....	10	56
Marietta	13	409	466	975	975	.....	22	131
Steuben, village	7	150	125	275	275	.....	5	58
Prairie du Chien	107	312	269	581	581	.....	3	69
Prairie du Chien, city:									
ward 1.....	113	218	267	575	585	.....	.....	.....
ward 2.....	247	472	611	1,083	1,083	.....	.....	.....
ward 3.....	267	564	629	1,193	1,193	.....	.....	.....
ward 4.....	69	150	168	318	318	.....	.....	.....
Total, city.....3,179							44	510	
Scott	178	498	432	930	930	.....	21	135
Seneca	229	613	571	1,184	1,184	.....	11	225
Lynxville, village	79	221	163	384	384	.....	11	62
Utica	302	738	714	1,452	1,452	.....	21	303
Wauzeka	92	256	237	513	513	.....	5	98
Wauzeka, village	111	216	233	449	449	.....	5	92
Total	3,498	8,783	8,143	16,926	16,926	.....	234	3,013

*Part in Vernon county.

The country surrounding the village is good for farming purposes, and a large per cent of the land suitable for crop raising is improved. The soil is a rich clay loam; about 60% of the land is rough, 10 per cent swampy, 10 per cent sandy and the remainder level and free from stone. Dairying is an important industry and the village is in need of a creamery or cheese factory.

GAYS MILLS.

Gays Mills, Crawford Co. Population, 427. On Western Wisconsin Ry., 43 miles from Prairie du Chien, the county seat, 102 miles from La Crosse, 96 miles from Dubuque, 105 miles from Madison, 185 from Milwaukee and 270 from Chicago. U. S. Express. Telephone connections. Fair shipping facilities and passenger service.

Has electric lights, a bank, 1 drug store, 4 grocery stores, 2 hardware stores, 2 dry goods stores, 2 physicians, 1 lawyer, graded school employing 3 teachers, and 2 hotels.

The Kickapoo river at this point furnishes a water power estimated at 100 h. p., not yet utilized for manufacturing purposes. Wood is used for fuel, obtained from adjacent country. Help

can be secured in the village and surrounding country to work the entire year. Raw material such as fruit and vegetables can be supplied for canning, and the natural products are clay, sand, stone and timber. A canning factory and a wood working establishment would be especially adapted to the wants of the village.

The country surrounding this village is mostly rough, but the soil is very rich and productive. About 40 per cent of the land suitable for crop raising is improved. Crops of all kinds do well in this section and a fine quality of tobacco is produced.

MT. STERLING.

Mount Sterling, Crawford Co. Population, 200. Not incorporated. Situated 28 miles northeast of Prairie du Chien, the county seat, and 15 miles from Gays Mills on Wisconsin Western Ry., the nearest banking and shipping point, 169 miles from Madison, 139 miles from Milwaukee and 274 miles from Chicago.

Has a telephone system, 3 grocery stores, 3 hardware stores, 2 dry goods stores, graded school employing 2 teachers, 1 hotel, 3 boarding houses, 1 physician, Congregational and Methodist churches.

There is a small undeveloped water power estimated at 25 h. p., that could be utilized for manufacturing purposes. Wood is used for fuel and is obtained from the adjacent country. Some help can be secured from the village and surrounding country to work the entire year. The country can supply fruit and vegetables for canning purposes and the natural products are clay, sand, stone and timber. The village is in need of a creamery or cheese factory.

The surrounding country is good for farming purposes and about two-thirds of the land suitable for crop raising is improved. The land is rough, with no swamps and but very little sand, and the soil is rich and productive.

PRAIRIE DU CHIEN.

Prairie du Chien, Crawford Co. Population, 3,179. The judicial seat of Crawford county is located on the C. M. & St. P. and the C. B. & Q. Ry., and on the Mississippi river, 47 miles from Dubuque, 57 from La Crosse, 98 from Madison, 183 from Milwaukee and 268 from Chicago. U. S. and Adams Express. Telegraph and telephone connections. Extra good shipping facilities and passenger service.

This city is one of the oldest settlements in Wisconsin. It occupies a splendid commercial position, the river and railway lines affording transportation to all parts of the United States. Has paved streets, many fine shade trees, substantial business blocks and public buildings. Is lighted by electricity, has

water works and a fire department, 2 banks, a full complement of stores and shops, good high and graded public schools, 3 churches representing all the leading religious denominations, good hotels, a free public library, good county buildings, a theological seminary, the St. Mary's academy for girls and the Sacred Heart academy for boys. Four weekly papers are published. The city is a popular summer resort. Its artesian mineral wells, the waters of which contain valuable curative properties, give the city an added attraction to visitors and bring many invalids. A large first class hotel is needed.

Overall, stove, woodenware, cement block, beet sugar, button and canning factories, and a tobacco warehouse would meet the industrial needs of the city.

Wood and coal are used for fuel. Wood can be obtained from the adjacent country and coal is shipped in. The river affords an undeveloped water power for manufacturing purposes. A large amount of help can be secured from the city and adjacent country to work the entire year. Such raw materials as fruit, vegetables and fish can be furnished for canning and the city is considered a good location for a canning factory. The natural products of the country are clay, sand, stone and timber, all of which can be furnished in large quantities.

The country surrounding the city is well adapted to farming purposes and nearly all the land suitable for crop raising is improved. The soil produces a high grade of leaf tobacco. Dairying is an important industry.

SOLDIERS GROVE.

Soldiers Grove, Crawford Co. Population, 718. On the Wisconsin Western Ry., 52 miles from Prairie du Chien, 111 miles from La Crosse, 114 miles from Madison, 194 miles from Milwaukee and 279 miles from Chicago. United States Express. Telephone. Fair shipping facilities and passenger service.

Has an electric light plant, a bank, 2 drug stores, 3 grocery stores, 3 hardware stores, 6 general stores, high school employing 6 teachers, 3 physicians, weekly newspaper, 1 lawyer, 2 hotels, 2 boarding houses, excelsior factory, grist mill, saw and planing mill, 3 blacksmith shops, jewelry store, 2 butcher shops, 3 tobacco warehouses and a creamery.

There is a water power estimated at 200 h. p., not developed. Wood is used for fuel, obtained from the adjacent country at very reasonable prices. Plenty of help can be secured in the village and surrounding country to work the entire year. Fruit and vegetables could be furnished for canning purposes if a

market was established. Clay, sand, stone and hardwood timber are the natural products, and can be supplied in large quantities. A large quarry of valuable building stone is located near the village. Is in need of a first-class hotel, canning factory and a wood-working establishment.

The country surrounding the village is good for farming purposes and about 50 per cent of the land suitable for crop raising is improved. The soil is a rich clayey loam, a little sandy in the valleys but very productive. The country is broken and rolling, about 25 per cent being level and free from stone. The soil produces a very high grade of leaf tobacco. Dairying is an important industry.

STEBEN.

Steben, Crawford Co. Population, 300. On the Wisconsin Western Ry., and Kickapoo river, 26 miles from Prairie du Chien, 85 miles from La Crosse, 118 miles from Madison, 168 miles from Milwaukee and 253 miles from Chicago. United States Express. Telephone. Fair shipping facilities and passenger service.

Has a general store, a physician, graded school employing 2 teachers, 1 hotel and a blacksmith and wagon shop.

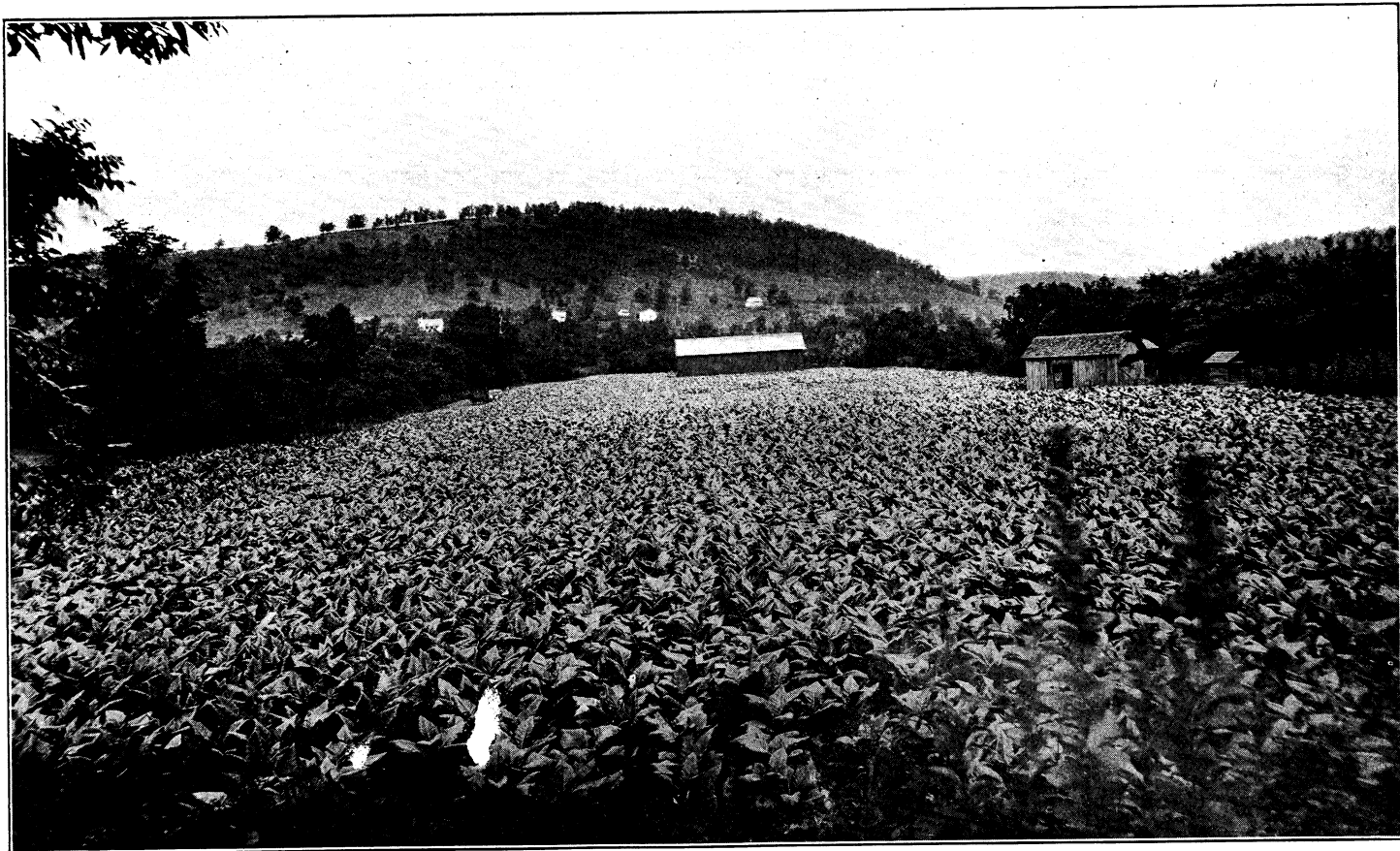
Wood is used for fuel, obtained from the adjacent country. The Kickapoo river will furnish an abundance of water power when developed. Plenty of help can be secured in the village and adjacent country to work the entire year. The natural products of the surrounding country are clay, sand, stone and timber. The village is in need of another hotel. There is a good grist mill site here as it is 12 miles to the nearest mill. Good location for a general store.

The country surrounding the village is good for farming purposes and about 60 per cent of the land suitable for crop raising is improved. The soil is a sandy loam in the valleys and a clayey loam on the elevations. About 40 per cent of the country is rough with 5 per cent level and stony and 5 per cent swamps. Dairying is an important industry.

WAUZKA.

Wauzeka, Crawford Co. Population, 449. On the C. M. & St. P. Ry., and the Wisconsin river. Also southern terminus of the Wisconsin Western Ry., 77 miles from La Crosse, 71 miles from Dubuque, 80 miles from Madison, 160 miles from Milwaukee and 245 miles from Chicago. U. S. Express. Telegraph and telephone connections. Good shipping facilities and passenger service.

Has 1 bank, 1 drug store, 3 grocery stores, 2 hardware stores, 2 general stores, 1 millinery store, graded school em-



TYPICAL WISCONSIN TOBACCO FIELD
Crop as shown growing on the farm of Governor Davidson, at Soldiers Grove, Crawford County

ploying 4 teachers, 2 hotels, 2 boarding houses, 1 physician, blacksmith and wagon shop, cold storage plant, flour mill, weekly newspaper and 3 churches.

The Kickapoo river furnishes a water power estimated at 50 h. p., not developed. Help can be secured in the village and adjacent country to work the entire year. Raw materials such as fruit and vegetables can be furnished for canning as soon as a demand is created. Clay, sand, stone, peat, and timber are the natural products. Two large stone quarries situated within one mile of the railway station furnish a fine grade of building stone. The village is in need of a canning factory, an excelsior mill and a tobacco warehouse.

The country surrounding the village is good for farming purposes and about 70 per cent of the land suitable for crop raising is improved. The soil is a black loam with but very little sand. A small portion of the river valley is swampy. A large per cent of the land is rough but very fertile, producing fine crops of hay, grain of all kinds, corn and tobacco.

DANE COUNTY.

Dane county is located in the south central part of the state. It is one of the largest and wealthiest counties in the state. It has an area of 1,188 square miles. The population in 1905 was 75,457, a gain of 6,022 over 1900. It is the second county in the state in population. About one-fifth of the population is of foreign birth, of which Norwegians and Germans are by far the most numerous. The total farm area in 1905 was 713,142 acres, embracing the entire tillable area of the county. Of this acreage, 517,938 acres were improved. The value of the farms in 1905 including improvements was \$45,341,857 as compared with only \$26,375,804 in 1890, or a gain of over 70 per cent in 15 years. The western part of the county has a rough topography resulting from stream erosion. The soil in the northern part of this district, bordering upon the Wisconsin river, is a sandy loam, which gives way to the south to a clayey loam of the lighter varieties with some prairie loam. The surface of the remaining part of the county is rolling and hilly. Traversing the county from the Wisconsin river, in a southeasterly

direction is a broad sandy tract, widening in the southern part in the vicinity of Brooklyn. The soil in the north central part is a prairie loam, while that covering the remaining part of the county is a light clayey loam. In the eastern part of the county and north of Madison are numerous irregular tracts of humus soils composed mostly of muck and peat. The principal crops and their acreage in 1890 and 1905 were as follows:

	Acreage in 1890.	Acreage in 1905.
Oats	95,852	111,724
Barley	30,014	19,266
Rye	5,025	4,229
Corn	91,581	110,168
Hay	105,617	101,658
Tobacco	9,306	12,925

It is the greatest tobacco producing county in the state and ranks as one of the foremost in the United States. The raising of sugar beets is becoming an important part of Dane county agriculture, in some regions even supplanting tobacco, the acreage devoted to this purpose in 1905 being 2,274 acres. It is also one of the foremost dairying counties. In 1905 there were 71 cheese factories and 63 creameries in the county. The price of unimproved land ranges from \$50 to \$80 per acre. For improved farm land the sale price ranges from \$75 to \$150 per acre. Madison is the county seat. The population of the local political divisions for 1905 will be found on the following page.

BELLEVILLE.

Belleville, Dane county, is an incorporated village of 423 inhabitants, located on the Illinois Central Ry., 156 miles from Chicago, 100 miles from Milwaukee and 18 miles from Madison; facilities for the receipt and shipment of freight good; American express.

Has a good supply of water power. Coal is used for fuel, being shipped in from Illinois and Indiana. Such raw materials as milk, sand, peat, stone and gravel can be supplied. A limited amount of help can be procured. A condensed milk factory or shoe factory would no doubt do well here. The village has an electric light plant, a telephone system, two banks, one drug store, two grocery stores, two hardware stores, two dry goods stores, one harness shop, two butcher shops, two warehouses, one furniture store, an undertaking establishment, one restaurant and two hotels. Three physicians and one lawyer

DANE COUNTY.

TOWNS, CITIES AND VILLAGES.	Families.	AGGREGATE POPULATION.			COLOR.			Ex-soldiers and sailors.	Militia.
		Male.	Female.	Total.	White.	Colored.	Indians.		
Albion.....	329	826	713	1,539	1,539	.....	.....	16	7
Berry.....	177	476	409	885	885	.....	.....	7	162
Black Earth	77	192	160	352	352	.....	.....	3	85
Black Earth, village.....	138	226	249	475	475	.....	.....	11	58
Blooming Grove.....	353	891	738	1,629	1,678	1	.....	8	356
Blue Mounds.....	211	574	511	1,085	1,085	.....	.....	9	201
Mt. Horeb, Village.....	243	482	521	1,003	1,003	.....	.....	9	182
Bristol.....	229	622	564	1,186	1,186	.....	.....	9	227
Burke.....	239	682	522	1,204	1,204	.....	.....	5	305
Christiana.....	308	940	791	1,731	1,730	1	.....	5	386
Cambridge, village.....	142	276	297	573	593	.....	.....	3	101
Cottage Grove.....	265	698	612	1,310	1,310	.....	.....	3	303
Cross Plains.....	227	602	556	1,158	1,158	.....	.....	2	196
Dane.....	171	487	425	912	912	.....	.....	5	199
Dane, village.....	32	142	146	288	288	.....	.....	.....	37
Deerfield.....	193	567	466	1,033	1,033	.....	.....	3	203
Deerfield, village.....	125	289	298	587	587	.....	.....	5	120
Dunkirk.....	258	776	617	1,393	1,393	.....	.....	6	313
Dunn.....	244	628	574	1,202	1,202	.....	.....	5	230
Fitchburg.....	199	508	433	941	936	5	.....	10	201
Madison.....	302	782	756	1,538	1,537	1	.....	8	292
Madison, city:									
ward 1.....	379	991	1,049	2,040	2,011	129	.....	.....	.....
ward 2.....	859	1,340	1,468	2,808	2,795	13	.....	.....	.....
ward 3.....	408	966	799	1,765	1,752	13	.....	.....	.....
ward 4.....	518	1,115	1,290	2,405	2,397	8	.....	.....	.....
ward 5.....	738	2,556	2,000	4,556	4,545	11	5	.....	.....
ward 6.....	856	2,024	1,901	3,925	3,916	9	.....	.....	.....
ward 7.....	488	1,096	1,075	2,171	2,169	2	.....	.....	.....
ward 8.....	505	1,281	1,218	2,499	2,483	16	.....	.....	.....
ward 9.....	372	799	754	1,553	1,547	6	.....	.....	.....
ward 10.....	117	271	308	579	579	.....	.....	.....	.....
Total, city.....	24,301	.....	.....	.....	.....	.....	.....	152	6,790
Mazomanie.....	101	218	224	442	442	.....	.....	3	77
Mazomanie, village.....	253	383	480	863	863	.....	.....	23	136
Medina.....	139	510	457	967	966	1	.....	2	173
Marshall, village.....	128	223	241	464	464	.....	.....	14	74
Middleton.....	216	554	487	1,041	1,011	.....	.....	2	196
Middleton, village.....	142	256	238	494	543	1	.....	2	90
Montrose.....	203	510	468	978	978	.....	.....	9	210
Belleville, village.....	106	204	219	423	423	.....	.....	7	86
Oregon.....	197	446	393	839	844	.....	.....	2	171
Oregon, village.....	194	337	366	703	703	.....	.....	12	119
Perry.....	198	548	513	1,061	1,061	.....	.....	7	171
Primrose.....	146	423	353	776	781	.....	.....	3	174
Pleasant Springs.....	255	789	595	1,384	1,384	.....	.....	5	330
Roxbury.....	185	464	481	945	915	.....	.....	6	182
Rutland.....	234	631	561	1,192	1,191	.....	.....	4	267
Brooklyn, vill., part of *.....	27	41	57	98	98	.....	.....	.....	14
Springdale.....	214	576	525	1,101	1,101	.....	.....	4	226
Spiritfield.....	188	567	495	1,062	1,062	.....	.....	4	200
Stoughton, City:									
ward 1.....	205	484	504	988	988	.....	.....	.....	.....
ward 2.....	274	671	612	1,283	1,282	1	.....	.....	.....
ward 3.....	250	577	571	1,148	1,148	.....	.....	.....	.....
ward 4.....	202	386	439	825	825	.....	.....	.....	.....
Total, city.....	4,244	.....	.....	.....	.....	.....	.....	30	929
Sun Prairie.....	211	526	492	1,018	1,018	.....	.....	4	221
Sun Prairie, village.....	321	514	572	1,086	1,086	.....	.....	22	172
Verona.....	247	668	612	1,280	1,280	.....	.....	15	198
Vermont.....	151	388	375	763	763	.....	.....	4	140
Vienna.....	192	554	491	1,045	1,044	1	.....	.....	242
Wapport.....	169	829	653	1,487	1,487	.....	.....	3	162
Wauwaukee, village.....	118	290	235	465	465	.....	.....	6	89
Wind-or.....	296	815	660	1,475	1,373	.....	.....	9	312
DeForest, village.....	115	222	231	453	453	.....	.....	.....	101
York.....	178	479	394	873	873	.....	.....	.....	216
Total.....	15,617	39,128	36,329	75,457	75,338	114	5	484	16,940

* Part in Green county.

1 8 Chinamen.

2 4 Chinamen.

3 1 Japanese.

are located here. The village supports an accredited high school employing six teachers; it also has two churches and an opera house. A weekly newspaper is published.

The land of the surrounding country is excellent for farming purposes, very little of which is stony or swampy; a little sandy south of the village; ninety per cent is free from stone. Most of the land suitable for general farming purposes is improved.

CAMBRIDGE.

Cambridge, Dane Co., is an incorporated village of 573 inhabitants located on the C. & Lake Superior Ry., a spur three miles long connecting with the C. & N. W. Ry., at London; is 24 miles from Madison, 64 miles from Milwaukee and 149 miles from Chicago; good freight and passenger accommodation; American express.

A small water power could be developed here. Such raw materials as fruit, vegetables, clay, sand and stone can be supplied and 120 laborers secured. An electric light plant could be profitably maintained here, also a first-class hotel. The village supports 2 banks, 2 drug stores, 2 hardware stores, 5 groceries, 4 general stores, 1 jewelry store, 1 restaurant, 2 shoe stores, 1 clothing store, 3 barber shops, 2 blacksmith shops, 1 livery and feed stable, 1 furniture store, 2 grist mills, 1 plumbing establishment, 1 lumber yard, 1 stock yard, 1 bowling alley, 1 creamery, 1 large tobacco warehouse, 1 printing office, 1 implement dealer, 1 dentist, 4 physicians, a high school employing 6 teachers, 2 parks, and 5 churches. Beautiful Lake Ripley is a half mile distant. The farm lands of the surrounding country are excellent for both dairying and general farming.

COTTAGE GROVE.

Cottage Grove, Dane Co., an unincorporated village of 250 population, is located on the C. & N. W. Railroad; 142 miles from Chicago, 71 miles from Milwaukee and 11 miles from Madison; has eight passenger trains daily, excellent freight facilities and American Express.

Wood, the principal fuel, is obtained from the farmers. Such raw materials as vegetables, sugar beets, clay, sand, some timber and stone can be supplied. Any amount of help can be procured. A small canning factory would no doubt be successful at this place.

The village has two grocery stores, one hardware store, one hotel and a small boarding house. There are two physicians located here. There is a good opening here for a druggist, tailor, jeweler, and tobacco buyer.

The surrounding country is most excellent for farming purposes, level, free from swamps, sand and stone. Tobacco raising is the leading industry of the farmers. Sugar beets are being cultivated more extensively every year.

CROSS PLAINS.

Cross Plains, Dane Co., is an unincorporated village of about 400 inhabitants located on the C. M. & St. P. Railroad, 111 miles from Chicago and 15 miles from Madison; facilities for shipment and receipt of freight are very good; U. S. Express.

Steam power would have to be used for any industry requiring power. Such raw materials as vegetables, clay, sand, stone and lime-stone can be supplied; and plenty of help can be procured. A brick yard and lime kiln would do well here. The village is also in need of a tin shop. The village has 1 bank, 2 drug stores, 3 hardware stores, 3 general stores, a laundry, several groceries, an elevator, lumber yard, stock yards, 4 blacksmith shops, furniture store, meat market, 2 large halls, 4 shoemaker shops, a harness shop and a hotel. Another hotel is desired. The village supports a school employing 6 teachers; has 2 physicians and 1 lawyer.

The land of the surrounding country is very fertile and is nearly all suitable for farming purposes, two-thirds of which is improved. There is some sandy land, some swampy but none stony. One-half of the land is level and free from any stone whatever.

DE FOREST.

De Forest, Dane Co., is an incorporated village of 453 people; is located on the C. M. & St. P. Railroad, 144 miles from Chicago, 95 miles from Milwaukee and 13 miles from Madison. Facilities for receipt and shipment of freight, good; has four passenger trains daily; U. S. Express.

Steam power would have to be used. Coal is procured from Illinois. Such raw materials as fruit, sugar beets and clay can be supplied, and any amount of help can be procured. An electric light plant could be supported at this place. The village has 1 bank, 1 drug store, 4 groceries, 2 hardware and 4 general stores; also 2 hotels, 2 boarding houses and a public school employing 6 teachers. Has a weekly newspaper. A creamery was once established here, but failed.

The surrounding country is excellent for farming purposes,

the soil being a rich loam, free from stone and sand, and with but a small part swampy.

MCFARLAND.

McFarland, Dane Co., is an incorporated village of about 300 inhabitants; located on the C. M. & St. Paul Railroad, 6 miles from Madison, 10 miles from Stoughton, 90 miles from Milwaukee and 130 miles from Chicago; U. S. Express.

Coal and wood are shipped in, the former from Illinois, the latter from the northern and western parts of the state. Such raw materials as vegetables, clay, sand and stone can be supplied; also plenty of help can be secured. The village has 1 bank, 4 general stores, 1 hardware store, a tailor shop, furniture store, meat market, 2 farming implement establishments, 1 hotel, 1 boarding house and a graded school. There is 1 physician and 1 lawyer located here. It is rapidly growing in popularity as a summer resort, having about 40 cottages and a lake nearby.

The soil of the surrounding country is a clayey loam, gently rolling, nearly all tillable, except a little marshy land here and there.

MADISON.

Madison, Dane Co. Population, 24,301. Situated between Lakes Monona and Mendota, 81 miles from Milwaukee, 138 miles from Chicago. Is on the line of the C. M. & St. P. R. R., the C. & N. W. Ry., and the Ill. Central R. R. Is the greatest railroad center in the state, nine lines radiating in different directions. No electric railway connection with other cities at present but two lines promised, one to Janesville and the other to connect with Fox River cities. Excellent street railway system. Private gas and electric plants. City owns water-works. Two telephone systems operating 4,600 instruments. American and United States Express companies.

Situated between the two most prominent of the cluster of lakes which form the headwaters of the Rock river. Madison, the seat of the state capital and university, ranks in many respects, next to Milwaukee, as the most important city in the state. While ranking sixth among Wisconsin cities as to population, it is first in education, second in the extent of its park system, annual building record and the number of miles of paved streets, and third as to postal receipts.

Madison is known as one of the greatest educational centers in the United States. The state university with over 3,600 students is located in this city. Its high school, for which a new building is being erected at a cost of \$250,000, for size and equipment is unsurpassed in the state. There are also two private academies, a library school, a commercial college, eleven public schools and several large parochial schools. As a supplement

to its educational system, Madison possesses a number of libraries of national importance. The state historical library, housed in a \$600,000 building and containing also a museum and art gallery, is one of the choicest collections in America. The state law library is complete in every respect. Other important libraries are the university library, city Carnegie library, state legislative library and collections of several learned societies. These libraries are annually visited by students and writers from every state in the union.

As a summer resort Madison has opportunities without limit. It has the lowest death rate of any city in the state as shown by the U. S. census report. Nature has been lavish in her gifts to this city and the country surrounding where five lakes with high wooded banks furnish scenery unsurpassed. The city has eight miles of water frontage on three lakes. To improve these natural advantages the Madison Park & Pleasure Drive Association has expended nearly \$200,000 for acquiring parks, playgrounds and public drives, all of which property is held in trust for the city. When the present plans of the association are complete, Madison will possess 150 acres of parks and playgrounds, located in all parts of the city, connected by a network of improved drives, parkways and canals so located by landscape gardeners as to combine in an unusual manner the uses of both land and water. To secure these results the city has expended but \$60,000, the remainder of the cost being made up by public subscription. Gifts to the city for this purpose during the last two years have aggregated over \$118,000. The Yahara river, which five years ago was nearly clogged with vegetation, has been dredged and its banks parked at a cost of \$83,000. Cement and stone bridges have displaced wooden structures. The railroads have aided this improvement and others by expenditures amounting to \$56,351.11. Many tracts of swampy ground have been converted into beautiful parks, bordering the lakes, by means of deep canals and locks made accessible to boats and launches. Twelve miles of improved drives stretch along the lake shores. As a result of these improvements, which have attracted national attention, the city is much sought by those who have a taste for nature.

Madison is also a manufacturing and commercial city, having made considerable strides in that direction during the last decade. In 1905 there were 84 manufacturing establishments, with

a capital of \$5,182,083, employing 1,476 men and with an annual product of \$3,291,143. During the last five years the number of establishments has increased 21.7 per cent; capital increased 49.1 per cent; number of wage-earners 8.1 per cent and value of products 22.4 per cent. There are large plants for the manufacture of machine tools, electrical machinery, agricultural implements, brass goods, harness specialties, shoes, beet sugar, confectionery goods, brick and clothing. Madison, on account of its railroad facilities, is the distributing point for farm implements, traction engines and vehicles for the state, twenty-eight establishments maintaining branch houses here. The city is also the center of the tobacco growing and shipping industry of the state, this product being handled in Madison by numerous warehouses, some of which are very large.

There is much land in the city well adapted to manufacturing purposes. Free sites can be obtained which afford shipping facilities over two railroads. Every inducement is extended for the location of industries, the Forty Thousand Club devoting itself to this purpose. The surrounding country can be drawn upon for a large increase of labor. There are no unoccupied buildings in the city. Madison offers an excellent location for wholesale establishments, especially a wholesale hardware company since the city is visited annually by hundreds of hardware merchants who come to purchase agricultural implements, and vehicle stocks; also a cement block factory. While Madison has a large number of hotels, capable of caring for 1500 people, yet owing to its increasing importance as a political and educational center, and as a summer resort city, it is in need of a large modern hotel. There are also excellent locations for summer hotels on the eminences overlooking the lakes and city. Movements to these ends would meet with the hearty co-operation of the city.

MARSHALL.

Marshall, Dane Co., is an incorporated village of 464 inhabitants; is situated on the C. M. & St. P. Railroad, 61 miles from Milwaukee, 17 miles from Watertown and 20 miles from Madison; freight and passenger accommodations good; U. S. Express.

Coal and wood are used for fuel, the former being shipped in from Milwaukee and Chicago, the latter from the northern and western parts of the state. Such raw materials as vegetables, sand and peat can be had; plenty of help can be secured. The village has a telephone system, 1 bank, 1 drug store, 6 grocery stores, 2 department stores, 4 dry goods stores, 2 restaurants, 2 hardware

stores, 1 public hall, a creamery, flouring mill, and 2 hotels. 2 physicians are located here. It also supports a high school employing 6 teachers, and 3 churches. A weekly newspaper is published.

The land of the surrounding country is suitable for farming purposes, nearly ninety per cent of which is improved.

MAZOMANIE.

Mazomanie, Dane Co., is an incorporated village of 863 inhabitants; located on the C. M. & St. P. Railroad; 189 miles from Chicago, 119 miles from Milwaukee. The passenger and freight accommodations are good; has U. S. Express.

A 125 horse water power can be developed within the village; coal and wood are both shipped in for fuel, the former from Illinois, the latter from the western part of the state. Such raw materials as fruit, vegetables, sugar beets, clay, sand, peat, small timber and stone can be supplied. Three hundred laborers can be secured. The village is already supplied with an electric light plant, telephone system, 1 bank, 3 drug stores, 5 groceries, 2 hardwares, 4 general stores, 1 furniture store, 1 undertaking establishment, 1 lumber yard, a millinery store, 2 hotels, 2 boarding houses, a public school employing 6 teachers, 6 churches, and 1 parochial school. The village owns its own electric light plant. At one time this village supported a wagon factory, a knitting factory, and a brewery. The latter burned down, the former three failed for various reasons. There are 2 physicians located in this place. A weekly newspaper is published.

The portion of land lying south and south-east of the village is very fertile, but near the Wisconsin River is a considerable amount of sandy land. The farmers of this community are very prosperous, and dairying is becoming more and more the leading industry.

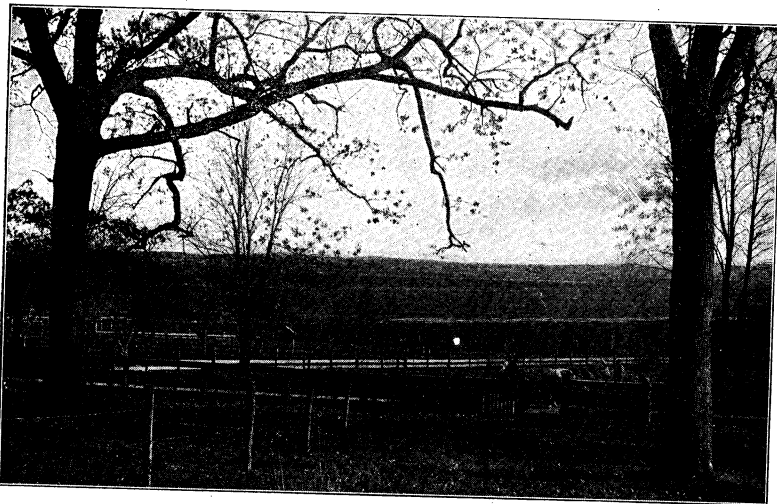
MIDDLETON.

Middleton, Dane Co., is an incorporated village of 544 inhabitants; located on the C. M. & St. P. Railroad, 6 miles west of Madison, 88 miles from Milwaukee and 138 miles from Chicago; U. S. Express; freight and passenger facilities are good.

Coal for fuel is shipped from Milwaukee, wood from the western part of the state. Such raw materials as clay, peat, sand and stone can be supplied. An electric light plant would probably do well here. The city has 1 bank, 1 drug store, 1 grocery store, 1

physician, and a public school employing 5 teachers. Has a weekly newspaper.

The land surrounding the village is well adapted for general farming purposes, nearly five per cent. of which is improved.



FARM SCENE, OREGON, WIS.

MORRISONVILLE.

Morrisonville, Dane Co., is an unincorporated village of 200 inhabitants located on the C. M. & St. P. Railroad, 145 miles from Chicago, 95 miles from Milwaukee and 14 miles from Madison; facilities for the receipt and shipment of freight good; has U. S. Express.

Coal and wood are used as fuel, the former being shipped in from Milwaukee and Chicago. Such raw materials as vegetables, clay, sand, peat, some timber, and stone can be supplied. Plenty of help can be secured. The village is in need of a general store. It is already supplied with a telephone system, 1 bank, 1 drug store, 2 groceries, 1 hardware store, 2 dry goods stores, grain elevator,, lumber yard, harness shop, shoe store and shop, 2 tobacco warehouses, 1 hotel, 1 boarding house, and a meat market. There is 1 physician located here. The village has a graded school employing 2 teachers.

The land of the surrounding country is excellent for farming purposes. There is some stony land, some swampy, but none sandy.

MT. HOREB.

Mt. Horeb, Dane Co., is an incorporated village of 1,003 inhabitants; is situated on the C. & N. W. Railroad, 153 miles from Chicago, 105 miles from Milwaukee and 23 miles from Madison; has fairly good freight and passenger facilities; American Express.

Coal and wood are used as fuel, the former being shipped from Milwaukee and Chicago. Such raw materials as fruit, vegetables, sand, stone, some timber and clay can be furnished. This village has a splendid opening for a laundry, tank factory, and a planing mill combined with a sash and door factory. Three hundred and fifty laborers can be secured. The village is already supplied with an electric light plant, a telephone system, 2 banks, 2 drug stores, 5 groceries, 2 hardware stores, 2 dry goods stores, a restaurant, 2 hotels and 2 boarding houses. Another hotel is desired. There are 3 physicians and 1 attorney-at-law located here. The city has a splendid public school system employing seven teachers. Streets are wide, well drained, partially macadamized and have cemented walks. It also has a public park. A weekly newspaper is published.

The surrounding country is devoted to farming, sixty-five per cent. of the land is improved. There is very little stony land, no swampy land and but little sandy soil. Dairying and tobacco raising are the principal occupations of the farmers.

ROCKDALE.

Rockdale, Dane Co., is an unincorporated village of about 225 people; is not located on any railroad.

It has a small undeveloped water power. Coal and wood are the principal fuels. Such raw materials as clay for brick, limestone and sand for the manufacture of glass can be supplied. The village has 2 groceries and 1 hardware store.

The country is excellent for farming purposes.

STOUGHTON.

Stoughton, Dane Co., has a population of 4,244; is located on the C. M. & St. P. Railroad; 81 miles from Milwaukee, 15 miles from Madison, the state capitol, and 153 miles from Chicago. It has thirteen passenger and mixed trains daily, excellent freight accommodations; U. S. Express.

Coal and wood are the principal fuel, the former being shipped from Illinois, the latter from the northern and western parts of the state. Such raw materials as fruit, vegetables, sugar beets, clay, sand and stone can be supplied, while other raw materials must be shipped in. Any amount of help can be procured.

The advantages offered for shipping and receipt of freight make this place a most favorable one for any kind of manufacturing establishment. This city offers a fruitful field for a gas plant. It is already provided with an electric light plant, telephone system, 2 banks, 4 drug stores, 8 groceries, 3 hardware, 2 department, and 6 dry goods stores, 2 laundries, 4 meat markets, 2 bakeries, 6 clothing stores, 5 shoe stores, a news stand, a candy factory, 3 blacksmith shops, 2 wagon factories employing about 700 men, shoe factory, 4 printing offices, a cement factory, several tobacco warehouses, a milling company, 3 hotels, 6 boarding houses and a public school employing nearly 30 teachers. The city also supports 7 physicians and 5 attorneys at law. 4 weekly newspapers are published. The city is situated within three and one-half miles from Lake Kegonsa, which is surrounded by hundreds of fine summer cottages, where thousands of tourists spend their summer vacations.

Nearly all of the country surrounding the city is excellent for general farming.

WAUNAKEE.

Waunakee, Dane Co., is an incorporated village of 465 people, situated on the C. & N. W. Railroad, 140 miles from Chicago, 92 miles from Milwaukee and 10 miles from Madison; freight and passenger accommodations good; American Express. Telegraph and telephone.

Coal and wood are used for fuel, the former being shipped in from Milwaukee and Chicago. Such raw materials as fruit, vegetables, clay, sand and stone can be supplied. A small canning factory and pickling establishment would do well here. Plenty of help can be procured. The village is already supplied with a telephone system, a bank, a drug store, 2 groceries, a hardware store, a department store, 4 dry goods stores, 6 saloons, a lumber yard, 4 general stores, 2 farm machinery establishments, an elevator, 2 barber shops, a creamery, 3 blacksmith shops, 1 jewelry store, 2 meat markets, 2 hotels, 4 boarding houses and a restaurant. There are 2 physicians located here; also a graded school employing 6 teachers.

The land of the surrounding country is excellent for farming purposes, nearly all of which is improved.

DODGE COUNTY.

Dodge county is located in the south-eastern part of the state. The area is 884 square miles. The population in 1905 was 45,773. One-fifth of the population is of foreign birth, consisting almost entirely of Germans. The farm area in 1905 was 507,331 acres, of which 372,087 acres were improved. The present farm area comprises nearly all the land which is capable of being profitably cultivated. The value of these farms, including improvements, in 1905 was \$39,663,006 as compared with \$26,663,441 in 1890, being an increase of about 48% in 15 years. The surface of the county is rolling and slightly hilly, but with no pronounced ridges, the topography being typical of the glaciated regions. The soils in the western part of the county are a light clayey loam. In the eastern half of the county the soils are clayey loams of the medium and heavier varieties, and unexcelled for fertility. A few tracts of prairie loam are found in the northern part. Numerous small and irregular areas of marshy soil composed mainly of muck and peat, occur in different parts of the county. The chief crops and the approximate acreage devoted to each in 1890 and 1905 were as follows:

	Acreage in 1890.	Acreage in 1905.
Wheat	54,417	9,442
Oats	41,877	77,687
Barley	79,743	93,050
Corn	32,542	45,438
Rye	2,656	1,504
Hay	81,094	73,332
Tobacco	8	2,664

Dodge county is easily the largest barley growing section in the state. Clover seed is also an important crop, nearly 2,500 acres being devoted to its culture. One of the leading sources of farm income is the dairy industry. In 1905 there were 126 cheese factories and 30 creameries, the county ranking second in the state in the number of cheese factories.

The range of prices for tracts of unimproved land is from \$25. to \$50. per acre, and for improved farm lands the prices range from \$50. to \$150. per acre. Juneau is the county seat. The following table shows the population statistics of the local political divisions for 1905.

DODGE COUNTY.

TOWNS, CITIES AND VILLAGES.	Families.	AGGREGATE POPULATION.			COLOR.			Ex-soldiers and sailors.	Militia.
		Male.	Female.	Total.	White.	Colored.	Indians.		
Ashippun	247	672	598	1,270	1,270	.....	.....	.....	.....
Beaver Dam	249	670	605	1,275	1,275	.....	.....	1	272
Beaver Dam, city:								4	258
ward 1.....	142	337	283	620	618	2	.....	.....	.....
ward 2.....	162	354	362	716	715	1	.....	.....	.....
ward 3.....	170	345	395	740	736	*4	.....	.....	.....
ward 4.....	189	330	387	717	717	.....	.....	.....	.....
ward 5.....	109	307	290	597	597	.....	.....	.....	.....
ward 6.....	161	326	375	701	701	.....	.....	.....	.....
ward 7.....	176	373	381	754	754	.....	.....	.....	.....
ward 8.....	200	368	402	770	770	.....	.....	.....	.....
Total, city...5,615								42	1,060
Burnett	218	539	466	1,065	1,065	.....	.....	6	201
Calamus	210	542	498	1,040	1,039	1	.....	6	106
Chester	134	329	293	622	622	.....	.....	4	100
Clyman	224	596	547	1,143	1,143	.....	.....	5	232
Elba	210	577	509	1,086	1,086	.....	.....	2	226
Emmet	208	565	486	1,051	1,051	.....	.....	4	227
Fox Lake	149	399	315	714	714	.....	.....	.....	156
Fox Lake, village.....	224	436	472	908	895	13	.....	16	163
Herman	239	673	603	1,276	1,276	.....	.....	2	245
Horicon, city:								.....	.....
ward 1.....	119	270	246	516	516	.....	.....	.....	.....
ward 2.....	118	249	251	500	500	.....	.....	.....	.....
ward 3.....	127	265	272	537	537	.....	.....	.....	.....
Total, city...1,553								.....	.....
Hubbard	291	768	670	1,438	1,438	.....	.....	16	306
Hustisford	364	831	815	1,646	1,646	.....	.....	5	279
Juneau, city:								3	519
ward 1.....	123	241	248	489	489	.....	.....	.....	.....
ward 2.....	128	220	235	455	455	.....	.....	.....	.....
Total, city...944								.....	.....
Lebanon	232	655	608	1,263	1,263	.....	.....	11	172
Le Roy	244	657	606	1,263	1,263	.....	.....	5	242
Lomira	292	817	755	1,572	1,572	.....	.....	13	225
Lomira, village	123	232	263	495	495	.....	.....	5	330
Lowell	327	851	739	1,590	1,590	.....	.....	3	83
Lowell, village	80	135	151	286	286	.....	.....	2	315
Reeseville, village	102	205	192	397	397	.....	.....	5	61
Mayville, city:								4	78
ward 1.....	116	189	183	372	372	.....	.....	.....	.....
ward 2.....	90	215	254	469	469	.....	.....	.....	.....
ward 3.....	218	475	477	952	952	.....	.....	.....	.....
Total, city...1,793								.....	.....
Oak Grove	296	822	673	1,495	1,495	.....	.....	12	322
Portland	212	568	516	1,084	1,084	.....	.....	6	252
Rubicon	221	643	537	1,180	1,180	.....	.....	2	206
Neosho, village	71	151	156	307	307	.....	.....	1	238
Shields	190	434	377	811	811	.....	.....	4	52
Theresa	253	702	648	1,350	1,350	.....	.....	.....	176
Theresa, village	90	167	187	354	354	.....	.....	4	20
Trenton	258	703	568	1,271	1,271	.....	.....	2	74
Watertown, city:								4	312
ward 5.....	224	463	495	958	958	.....	.....	.....	.....
ward 6.....	317	598	666	1,264	1,264	.....	.....	10	141
Total, city...13,622								12	218
Waupun, city:								.....	.....
ward 1.....	128	218	254	472	472	.....	.....	.....	80
ward 2.....	110	177	212	389	389	.....	.....	.....	42
ward 3.....	84	115	160	275	275	.....	.....	.....	38
ward 4.....	80	135	158	293	293	.....	.....	.....	45
prison ward		592	16	608	573	25	10	.....	.....
Total, city...13,111								33	.....
Westford	174	471	409	880	880	.....	.....	6	153
Randolph, village:								.....	.....
east ward	170	286	317	603	603	.....	.....	3	110
Williamstown	193	490	444	934	934	.....	.....	6	144
Total	9,786	23,748	22,025	45,773	45,717	46	10	269	8,609

†Includes total in Dodge and Fond du Lac counties.

‡Includes total in Dodge and Jefferson counties.

§West ward in Columbia county.

*4. Japanese

BEAVER DAM.

Beaver Dam, Dodge Co., is an incorporated city of 5,615 population located on the C. M. & St. P. Ry., 65 miles from Milwaukee, and 150 miles from Chicago; has 4 passenger trains daily and good freight accommodations; U. S. Express.

The city would support both a shoe and a starch factory and furnish site. Plenty of help could be secured. Coal is the principal fuel, shipped from Milwaukee. Such raw materials as clay, sand and stone can be supplied. The city already has a gas plant, an electric light plant, telephone system, 2 banks, 3 drug stores, 5 groceries, 3 hardwares, 6 general stores, 2 laundries, 3 furniture stores, 3 meat markets, 3 livery stables, 2 hotels, 3 lumber yards, 3 elevators, 1 large malleable iron plant and foundry, 2 woolen mills, 1 cotton mill, 1 steel range plant, 1 agricultural implement factory and a flouring mill. It supports 6 physicians and 5 lawyers. It has an excellent school system, and a large public library. Has 2 weekly and one monthly newspapers. It can be made a summer resort town and is in need of another first-class hotel.

The surrounding country is composed of some of the best farming lands in the state. The soil is a clayey loam free from stone and sand. A large marsh lays in close proximity to the city.

BURNETT.

Burnett, Dodge Co., is an unincorporated village of about 200 inhabitants located on both the C. & N. W. and the C. M. and St. P. railroads about 44 miles from Oshkosh, 59 miles from Milwaukee, 144 miles from Chicago; passenger and freight services good; both American and U. S. Express.

Coal shipped from Milwaukee is the principal fuel. Such raw material as vegetables, clay, peat and sand can be supplied. Not much help is available. The village has 2 groceries, 1 hardware, 2 general stores, 2 elevators, 2 blacksmith shops, 1 butter factory, 1 hotel and a graded school employing 2 teachers. The village has one physician.

The surrounding country is well improved, and well adapted for farming. The soil is very fertile, free from sand and stone, but some marshy land. Dairying and stock raising are the chief occupations of the farmers.

CLYMAN.

Clyman, Dodge Co. Not incorporated. It has about 150 population; 138 miles from Chicago, 56 miles from Milwaukee; freight and passenger facilities are adequate; has American Express.

Such raw materials as vegetables, sand and stone are available;

and plenty of help can be secured. A grist mill would be of considerable advantage to the place.

The place supports 2 grocery stores, 2 hardware stores, 2 general stores, and 2 boarding houses. One physician is located here.

Ninety per cent of the land surrounding the village is improved, and is well adapted for general farming. The soil is very fertile, free from stone, sand and marshes.

DANVILLE.

Danville, Dodge Co., is an unincorporated village of about 126 people; is located on the C. M. & St. P. Ry.; freight and passenger facilities are fairly good; has U. S. Express.

This village has some undeveloped water-power; such raw materials as peas and corn could be supplied, also clay, sand, peat, some timber and stone; the village has a grocery store, 1 hardware store, 1 dry goods store, a mill, creamery and blacksmith shop; it has a graded school employing 2 teachers; a small hotel could probably be maintained in this place.

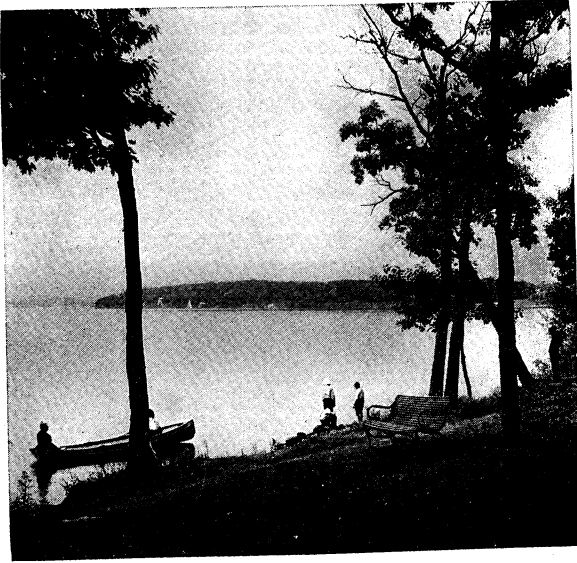
The surrounding country is well adapted for farming purposes.

FOX LAKE.

Fox Lake, Dodge Co., is an incorporated village of 908 inhabitants situated on the main line of the C. M. & St. P. Ry., between Milwaukee and La Crosse; is 71 miles from Milwaukee, 156 miles from Chicago; has 4 daily passenger trains, good freight accommodations; U. S. Express.

Coal shipped from Milwaukee is the principal fuel. About 100 horse water-power can be developed at this place. Such raw materials as fruit, vegetables, sand and peat can be supplied, and plenty of help secured. The village would support a shoe and a canning factory. It is already supplied with an electric light plant, a telephone system, 1 bank, 2 drug stores, 8 grocery stores, 2 harness shops, 2 wagon shops, printing office, 2 meat markets, 1 creamery, 3 blacksmith shops, a jewelry store, 2 hardwares, 5 general stores, 1 laundry, 3 implement dealers, a gas mantle factory, a flouring mill, a brewery, 5 hotels, 1 boarding house, and a high school employing 8 teachers; it also supports 3 physicians and 2 lawyers. A weekly newspaper is published. It is a beautiful summer resort town located on a lake having seventeen miles of shore line, dotted with many beautiful wooded islands. The village prides itself on its many beautiful residences, shade trees, macadamized streets and its public park.

The land of the surrounding country is a black clayey loam, excellent for farming purposes, and very little of it is marshy. Dairying is the leading industry of the farmers.



SUMMER SCENE AT FOX LAKE.

HORICON.

Horicon, Dodge Co. Population, 1,553. Situated 6 miles from Juneau, 6 miles from Mayville, and 54 miles from Milwaukee. Located at a junction point on the C. M. & St. P. Ry. There are no electric lines. Electric lighting plant. Telephone system. Western Union telegraph. United Express.

Horicon is located on the Rock river, a water power stream. The power developed is practically all utilized. The factory products of the city are agricultural implements and windmills. There are no unoccupied factory buildings. Horicon is the center of a wealthy farming and dairying region and vegetables and sugar beets could be furnished in large quantities to any factory desiring them. Being a thickly settled country, labor could easily be obtained for additional factories. The hotel accommodations of the city are ample. A weekly newspaper is published.

HUTISFORD.

Hustisford, Dodge Co., is a thriving unincorporated village of about 800 inhabitants, situated five miles from railroad. Its nearest station is Woodland on the C. M. & St. P. Ry., 46 miles from Milwaukee, 131 miles from Chicago and 50 miles from Oshkosh; has U. S. Express.

A 1000-horse water power can easily be developed within the village. Coal and wood are used for fuel, coal being shipped from Milwaukee, wood being obtained from the surrounding country. Such raw materials as clay, sand, peat, small timber, fruit, vegetables, corn and carp can be supplied, and plenty of help can be procured. The village being located near a very fine lake, it could be made a summer resort. The village has 1 bank, 2 drug stores, 2 groceries, 2 hardware, and 4 general stores, 2 furniture stores, 1 wagon factory, 1 music and jewelry store, 2 grist and flouring mills, 4 blacksmith shops, 2 barber shops, 4 dressmaking establishments, 1 millinery store, 2 shoe-making shops, 1 pop factory, one canning factory which produced 800,000 cans of corn in 1905, 2 hotels, 2 boarding houses, a graded school employing 5 teachers, and a twenty-acre park. The residences and business blocks of this place are very substantially built, sidewalks are of cement and shade trees are plentiful.

All the surrounding country is suitable for farming purposes, the separate land being very fertile, having a clayey sub-soil, free from sand, stone and swamps. There are 18 cheese factories in the town.

JUNEAU.

Juneau, Dodge Co., is an incorporated village of about 944 people; is located on the C. & N. W. Railroad, 15 miles from Watertown, 32 miles from Fond du Lac, 76 miles from Milwaukee, and 145 miles from Chicago; freight and passenger services are very good. American Express Company.

Such raw materials as fruit, vegetables, clay, peat, timber, sand and stone can be procured; also plenty of help; coal and wood are the principal fuels, the former being shipped in from Milwaukee and Chicago. The city is supplied with a bank, 2 drug stores, 5 grocery stores, 2 hardwares, 5 general stores, and 1 laundry; also 3 physicians, a lawyer, a graded school employing 9 teachers, 4 hotels and 3 boarding houses, a city park, court-house and other county buildings.

Nearly all the land in the surrounding country is improved, having the best of soil, is some rolling and slightly stony; most of the land, however, is free from stone.

KEKOSKEE.

Kekoskee, Dodge Co., an unincorporated village of about 150 people, not located on railroad; about three miles from Mayville the nearest station.

The farming country around Kekoskee is first class. There is some marsh land, no sand, and the soil is free from stone. Dairying is the leading industry of the farmers. The village has 2 groceries, 2 general stores and 1 hotel.

LOMIRA.

Lomira, Dodge Co., is an unincorporated village of about 495 people, located on the Wisconsin Central Railroad, 143 miles from Chicago, 52 miles from Milwaukee; has fairly good passenger and freight services; National Express.

The village has been beautified by a chain of five artificial ponds from one to fifteen acres in extent through which a limpid stream of spring water flows. These ponds are well stocked with fish and their shaded shores are favorite resorts for the angler.

Coal shipped in from Milwaukee is the principal fuel; such raw materials as fruit, vegetables, milk, clay, sand, timber, iron and stone can be secured. The village desires a canning factory. An electric light plant could also be supported here. There are 4 general stores, 1 hardware store, 1 tin shop, 1 shoe store, 1 jeweler, 1 bank, 2 hotels, 2 meat markets, 3 barber shops, 1 photograph gallery, 2 furniture stores, 2 cigar factories, 1 lumber yard, a wood-working factory and sawmill, a weekly paper and printing office, 2 physicians, 3 blacksmith shops, a wagon maker, a cheese factory in the village and 3 more near and tributary thereto, also a creamery with 3 skimming stations, 2 large grain elevators, where wood and coal are also handled, 1 livery barn, 1 harness shop, 2 milliners, 1 clothing store, 6 saloons, 1 live stock firm, a park with a large hall, a dentist, a lamp and blow torch company.

It has a graded school employing 5 teachers. Its streets are well macadamized and supplied with plenty of shade trees. It

also has a Lutheran church, Catholic church, Evangelical church and a Tabernacle.

The surrounding country is well adapted for farming purposes, little stony, no sand or swamps.

MAYVILLE.

Mayville, Dodge Co., is an incorporated city of 1,792 inhabitants located on the C. M. & St. P. Ry., 55 miles from Milwaukee, 21 miles from Fond du Lac and 140 miles from Chicago; has good passenger and freight service. United States Express.

A considerable supply of water power remains undeveloped in the immediate vicinity of the city. Coal is the principal fuel although wood is still used to some extent. Any kind of industry could be supported here that uses fruit, vegetables, clay, sand, small timber, limestone, peat or iron ore, peat being supplied from a large marsh near by, iron ore from a mine south of the city. Help is scarce. An establishment known as the American Bottle Straw Cover Mfg. Co., was once established here, upon ground furnished by the city, but failed either because of mismanagement or lack of demand for its products.

The city supports Lutheran, Catholic, Methodist and Presbyterian churches, 4 physicians, 4 lawyers, a high school employing 14 teachers, 1 bank, 3 drug stores, 5 grocery stores, 2 hardware stores, 5 general stores, 2 millinery stores, 3 jewelry stores, 3 meat markets, 2 hotels, 2 boarding houses, an electric light plant, telephone system, two halls, a blast furnace foundry, malt house and 2 breweries. The N. W. I. Co. is making a half million dollar addition to their plant. Has one weekly and one semi-weekly newspaper.

All the country surrounding the city suitable for farming purposes is improved. The soil is a rich black loam, free from stone and sand. The surface of the country is somewhat rolling south and east of the city, but level north.

MINNESOTA JUNCTION.

Minnesota Jet., Dodge Co. An unincorporated village of about 250 inhabitants, located at the junction of the C. & N. W. and the C. M. & St. P. railroads, 57 miles from Milwaukee and 142 miles from Chicago; has fair freight and passenger accommodations; U. S. and American Express.

The village has no water power. Coal and wood are used for fuel, the former being procured from Milwaukee and Illinois points. No raw materials can be supplied. The village has one grocery store, 1 hardware, 1 general store, 2 hotels and 2 board-

ing houses. The surrounding country is all excellent farming land, free from stone, sand and gravel, and but very little marshy.

NEOSHO.

Neosho, Dodge Co., is an unincorporated village of about 350 people; it is not located on any railroad; Woodland, about four miles distance on the C. M. & St. P. Railroad, is the nearest station.

Coal and wood are used as fuel, the former being shipped in from Chicago; vegetables can be grown for canning purposes; sugar beets are also successfully grown in the surrounding country; clay, sand, some timber and limestone can be supplied. The village has no electric light plant; it has 1 bank, 1 drug store, 3 grocery stores, 2 hardware stores, 2 general stores, one flouring mill, 1 brewery, 2 meat markets, 3 blacksmith shops, 2 hotels, 2 boarding houses and a graded school employing 4 teachers. It also supports 2 physicians and a weekly newspaper.

The surrounding country is practically all improved. The soil is a rich loam, free from stone, sand, and but very few swampy places.

REESEVILLE.

Reeseville, Dodge Co., an incorporated village of 397 inhabitants; is located on the main line of the C. M. & St. P. Ry., between Milwaukee and La Crosse; is 141 miles from Chicago, 56 miles from Milwaukee and 142 miles from La Crosse; U. S. Express; excellent freight and passenger services.

A good location for a factory canning peas, corn and tomatoes. The village supports 1 bank, 1 drug store, 2 hardware stores, 4 general stores and 1 first class hotel. It has a graded school employing 4 teachers. A newspaper is published.

The soil of the surrounding country is very fertile, land level and all improved.

THERESA.

Theresa, Dodge Co., is an incorporated village of 354 inhabitants situated on the Wisconsin Central Ry., 141 miles from Chicago and 49 miles from Milwaukee, via Rugby junction and the C. M. & St. P. Ry.; has passenger and accommodation trains daily; freight facilities good; National Express.

The village has about 100-horse water power, which can easily be developed. Such raw materials as fruit, vegetables, sugar beets, clay, sand, stone, and peat can be supplied in large quantities. Wood, procured from the surrounding country and coal

from Milwaukee, are used as fuel. Plenty of help is also to be had. The village desires to secure both a pickling and canning factory. It has no electric light plant but is supplied with a telephone system, 1 bank, 1 drug store, 2 groceries, 2 hardware stores, 2 general stores, 1 flouring mill, 2 saw, planing and woodworking mills, 2 breweries, 1 furniture store, 1 meat market, 2 churches, 2 parochial schools, a public school employing five teachers, 1 bakery, 3 blacksmith shops, 1 hotel and 1 boarding house. It also supports 3 physicians. Another first class hotel is needed.

Nearly all of the surrounding country suitable for farming purposes is improved. The soil is fertile, not very stony, is some sandy and but little marshy.

WATERTOWN.

Watertown, located on the boundary line between Jefferson and Dodge counties. Population, 8,035. 24 miles from Milwaukee, 38 miles from Madison and 120 miles from Chicago. C. & N. W. and C. M. & St. P. Rys. An electric railway connecting with Milwaukee is to be constructed in the near future. The city has a good waterworks system. Telephone system. Electric light and gas plants. Western Union telegraph. U. S. and American express.

Watertown is located on the Rock river, which is a water power stream and which develops at this place an extensive power not all of which is being utilized. Owing to its excellent railroad facilities, Watertown has gained considerable prominence as a manufacturing city. It has extensive malt houses, paper-box factories, iron works, shoe factories, furniture factories, and several plants for the manufacture of candies and confectionery goods. Watertown is anxious to secure the location of additional factories. Sand, timber and stone are the leading raw materials. There are no unoccupied factories in the city. The surrounding country can be drawn upon for a considerable increase in the factory labor force. Three banks furnish ample banking facilities. There are 11 physicians and nine lawyers. Watertown has 6 hotels, but there is a demand for a modern first class hotel. Four weekly and one daily papers are published.

WAUPUN.

Waupun, Dodge Co., has a population of 3,111; two wards of this city are located in Fond du Lac. The city is situated on the C., M. & St. P. Railroad, 69 miles from Milwaukee, 154 miles from Chicago and 34 miles from Oshkosh; passenger and freight facilities good; has U. S. Express.

Coal shipped from Chicago is the principal article of fuel; vegetables could be supplied for a canning factory; there is an abundance of limestone in the vicinity; the Northwestern

Railway runs within two and one-half miles of the city; It is supplied with an electric light plant; telephone system, two banks, three drug stores, six grocery stores, three hardware stores, one department store, four dry goods stores, one laundry, one shoe-store, two jewelry stores, two newspaper offices, three livery stables, two candy factories, one machine shop and wind-mill factory, two lumber yards, one marble shop, two blacksmith shops, one opera house, one public hall, two furniture stores, one flouring mill, three millinery stores, two agricultural implement establishments, two elevators, one creamery, one tank, vat and wood working establishment, one plow factory, two cigar factories, three hotels and one boarding house. There are also six physicians and five lawyers established here. The city supports an excellent high school employing 17 teachers. The city would probably be a good field for the establishment of a gas plant and a vegetable canning factory. The streets are well kept, the business portion being paved. The city has many fine residences, and abundance of shade trees mostly maple. It is also supplied with a public library.

The surrounding country is well adapted for general farming nearly all the land being improved. The soil is very fertile, a clayey loam and not much swampy land nearer than three and one-half miles from the city.

WOODLAND.

Woodland, Dodge Co., is located on the C. M. & St. P. Railroad, 46 miles from Milwaukee, 131 miles from Chicago, and 30 miles from Fond du Lac; is an unincorporated village and has a population of about 150 people; passenger and freight services are good.

Vegetables can be grown abundantly; a cheese box factory would probably do well here. The city has neither electric light plant, bank, or drug store. This city is supplied with one grocery store, one hardware store, one general store, two cheese factories, one hotel and two boarding houses. Has no physician.

The surrounding country is most excellent for farming; The soil is very fertile.

DOOR COUNTY.

Door county is located in the north-eastern part of the state, between Lake Michigan and Green Bay. The area of Door county is 454 square miles. Its population in 1905 was

19,631, a gain of 2,048 since 1900. Nearly one-fourth of the population is foreign born, the largest foreign element being Germans, the other important nationalities being Norwegians, Swedes, Belgians and Canadians. The northern part of the county is rough and rugged, while the southern part is more level and rolling. The soil of nearly the entire county is a heavy loamy clay of a rich quality. There is no soil in the northern part of the state better adapted to general farming and to dairying, and stock raising in particular, than this. This soil is quite generally free from stones. There are several marshy tracts along the shore of Green Bay and also on the Lake Michigan side. In the southern part of the county and along the Michigan side there are a few tracts of red clay soil of a very pure texture, such as cover practically all of Brown and Ashland counties. Door county has about 232,000 acres in farms, of which amount nearly 126,000 acres are improved. In 1890 the farm acreage was 186,332, of which 80,185 acres were improved. The value of the farms and improvements in 1905 was \$7,782,527, as compared with \$2,785,175 in 1890. The chief crops and their acreage in 1890 and 1905 were as follows.

	Acreage in 1890.	Acreage in 1905.
Hay	25,617	33,287
Wheat	12,320	8,626
Oats	10,804	14,767
Rye	2,533	5,998
Barley	1,225	3,706

In 1905 there were 6 creameries and 22 cheese factories in the county. Unimproved land which can be made tillable is worth about \$9. per acre. The price of improved farm land averages about \$45. per acre. The principal city and also the county seat is Sturgeon Bay. The population of the cities, villages and towns of the county for 1905 was as follows:

DOOR COUNTY.

TOWNS, CITIES AND VILLAGES.	Families.	AGGREGATE POPULATION.			COLOR.			Ex-soldiers and sailors.	Militia.
		Male.	Female.	Total.	White.	Colored.	Indians.		
Bailey's Harbor	151	387	321	708	708	.....	.....	5	118
Brussels	226	692	691	1,383	1,383	.....	.....	2	22
Clay Banks	117	321	266	587	587	.....	.....	2	112
Egg Harbor	178	531	446	977	977	.....	.....	7	194
Forestville	267	782	625	1,407	1,407	.....	.....	7	284
Gardner	162	489	400	889	889	.....	.....	3	177
Gibraltar	242	617	589	1,206	1,206	.....	.....	11	186
Jacksonport	169	519	436	955	955	.....	.....	4	172
Liberty Grove	310	892	736	1,628	1,628	.....	.....	1	290
Nasewaupsee	259	700	655	1,355	1,355	.....	.....	7	241
Sevastopol	308	896	813	1,709	1,709	.....	.....	10	250
Sturgeon Bay	122	331	293	624	624	.....	.....	8	110
Sturgeon Bay, city:									
ward 1.....	323	808	789	1,597	1,597	.....	.....	26	316
ward 2.....	178	409	423	832	832	.....	.....	8	172
ward 3.....	234	520	532	1,052	1,052	.....	.....	10	174
ward 4.....	251	604	555	1,159	1,156	3	.....	9	263
Total, city... 4,640									
Union	101	359	293	652	652	.....	.....	1	119
Washington	202	499	412	911	911	.....	.....	5	169
Total	3,800	10,356	9,275	19,631	19,628	3	.....	131	3,639

BAILEY'S HARBOR.

Bailey's Harbor, Door Co. Population, 275. A village on the shore of Lake Michigan, 25 miles northeast of Sturgeon Bay, the nearest railroad station and banking point. Shipping facilities on the lake good in summer. Stage daily to Sturgeon Bay, Jacksonport, and Sister Bay.

The village has a telephone system, 1 drug store, 2 grocery stores, 2 hardware stores, 2 general merchandise stores, graded school employing 2 teachers, one hotel, 2 boarding houses, 1 physician, Catholic and German Lutheran churches, blacksmith shop, flour and saw mill, cigar factory and shingle mill.

Steam power would have to be used for manufacturing purposes. Wood is used for fuel obtained from the farmers near by. Plenty of help can be secured in the village and surrounding country to work the entire year. Fruit, vegetables and peas can be supplied for canning. There is clay, sand and timber in abundance.

The surrounding country is good for farming and about all of the land suitable for crop raising is improved. The land is mostly level and stony. Some marshes northeast of village. Peas are the principal crop raised making this a good location for a pea canning factory. The village is a summer resort and better hotel facilities are needed.

DETROIT HARBOR.

Detroit Harbor, Door Co. Population, 450. A village on the shore of Lake Michigan, in Washington township, 50 miles northeast of Sturgeon Bay, the nearest banking point and railway station.

The harbor is the southern indentation of Washington island and the village is fast becoming a favorite summer resort. Has a telephone system, 3 grocery stores, 2 hardware stores, 2 dry goods stores, a laundry, 3 hotels, 4 boarding houses, graded school employing 2 teachers, Baptist and Methodist churches, one physician, saw and grist mills, blacksmith shop etc. Has neither gas nor electric lights nor newspaper. A first class hotel is needed.

There are 500 acres of land open for summer cottages on the shores of the harbor. Steam power would have to be used for manufacturing. Plenty of help could be secured in the vicinity. Such raw materials as fruit, vegetables and fish could be furnished for canning. The village can be supplied with clay, sand, hardwood timber and stone.

The adjacent country is good for farming and only about $\frac{1}{4}$ of the land suitable for crop raising is improved. Detroit Harbor is a very beautiful sheet of water and with the islands affords some very picturesque natural scenery. The residents are sparing no expense to make this the most popular resort of this section

EGG HARBOR.

Egg Harbor, Door Co. Population, 100. A village and summer resort on Green Bay; is 18 miles northeast of Sturgeon Bay, the county seat and nearest railway and banking point, and 65 miles from the city of Green Bay. Has telephone connections and stage daily to Sturgeon Bay.

Is supplied with a drug store, 2 general merchandise stores, 2 hotels, public school, one church, blacksmith shop, saw mill and a lath mill.

Wood is used for fuel obtained from the surrounding country. A canning factory could be supplied with fruit, vegetables and fish. There is plenty of clay, sand, timber and stone in the vicinity. Some help can be secured. Good location for canning factory or grist mill.

The surrounding country is good for farming and a large per cent of the land suitable for crop raising is improved. The soil is a sandy loam, not many swamps, some portions are free from stone but a great deal of the land is stony.

EPHRIAM.

Ephraim, Door Co. Population, 200. A village on the shore of Green Bay in Gibraltar township, 30 miles northeast of Sturgeon Bay, the nearest railroad and banking point, 149 miles from Milwaukee. Shipping facilities good on the bay in season. Has telephone system.

This village is supplied with three general merchandise stores, Lutheran and Moravian churches, one physician, a school employing one teacher. The village is a summer resort and a first class summer hotel would do a good business. Stages daily to Sturgeon Bay and intermediate points. Fishing is quite an important industry. There is one steam boat dock located here. No parks, but plenty of cedar, spruce, maple and black oak shade trees.

There is some good farming land near the village and about 50 per cent is unimproved. Peas is the principal crop raised making this a good location for a pea canning factory. The village can be supplied with clay, sand, timber and stone.

JACKSONPORT.

Jacksonport, Door Co. Population, 200. A village on Lake Michigan in Jacksonport township, 16 miles northeast of Sturgeon Bay, the nearest railroad and banking point. Has good shipping facilities by water on Lake Michigan.

Has telephone system, 2 general stores, 2 hotels, good schools and churches, blacksmith shops and large fishing industries. Has no physician.

Steam power would have to be used for manufacturing. Wood is used for fuel obtained from the adjacent country. Plenty of help can be secured in the vicinity to work in factories. A canning factory could be supplied with fruit, vegetables and fish. Peas are the principal product of the farms. The village can be supplied with sand, timber and stone. This is a good location for another hotel.

Jacksonport is surrounded by a good farming country and about $\frac{3}{4}$ of the land suitable for crop raising is improved. The soil is a sandy loam with clay subsoil, and a large per cent is level and free from stone. The village is destined to become a popular summer resort. There is some fine natural scenery and the streams and lakes are stocked with all kinds of fish.

STEVENSONS PIER.

Stevensons Pier, Door Co. Population, 150. An unincorporated village located on Green Bay, in Gardener township, 10 miles west of Sturgeon Bay, the county seat, banking point and nearest railway station. Has telephone connections.

The village is supplied with a grocery store and hotel, furniture store, blacksmith and wagon shop, lumber and planing mill. Steam power is used. Wood is used for fuel obtained from the surrounding country. Fruit, vegetables and fish can be supplied for canning. Plenty of timber and stone in the vicinity. Some help can be secured here. A grist mill and a creamery are needed.

About $\frac{1}{3}$ of the land in the township is used for agricultural purposes.

STURGEON BAY.

Sturgeon Bay, Door Co. Population, 4,640. The judicial seat of Door county, is an incorporated city, located on the Ahnapee & Western Ry., 45 miles north-east of Green Bay and on an inlet of the same name. 165 miles from Milwaukee and 250 miles from Chicago. Express United States; telephone and telegraph. Has the advantage of shipping either by rail or water. A canal $1\frac{1}{2}$ miles in length connects Green Bay with Lake Michigan at this point, thus shortening the passage from the south into Green Bay by 100 miles.

The city is lighted by electricity, has 4 banks, 3 drug stores, 14 grocery stores, 5 hardware stores, 9 churches, excellent educational advantages, 3 good hotels, a number of boarding houses, 8 physicians, 4 lawyers, 2 weekly newspapers, 2 shoe stores, 4 jewelry stores, 3 restaurants, 4 dentists, 5 butcher shops, 5 blacksmith shops, 3 tailor shops, 3 photographers and 3 millinery stores. There are extensive stone quarries located near by. The village is also supplied with dry docks and ship yards, brewery, canning factories, flour, planing and saw mills, furniture factory, foundry and machine shops, etc. The Goodrich line of steamers touch here tri-weekly and the Hart line to Green Bay and all ports on Green Bay makes this port daily.

Wood and coal are used for fuel, the former being obtained from the adjacent country and the latter is shipped from the lower lake ports. Help can be secured in the city and country to work the year round. Fruit, vegetables and fish can be supplied for canning. There are two pea canning factories located here at present. Sand, stone, timber and red and blue clay are the natural products. The timber comprises hemlock, pine, spruce, maple, basswood, birch, beach and cedar.

The country surrounding the city is suitable for agricultural purposes and is about one half improved. About 60

per cent of the land is level and free from stone, 20 per cent swampy and sandy. The city is a summer resort.

DOUGLAS COUNTY.

Douglas county is located in the north-west corner of the state. The area of this county is 1,319 square miles, with a population of 43,499, a gain of 7,164 over 1900. 84% of the population of the county is in the city of Superior. There are over 16,000 people of foreign birth in the county, the nationalities represented arranged according to their number are as follows: Swedes, Norwegians, Canadians, Finns, Germans and Irish. There are also a large number of Russian and Polish settlers. While one of the largest counties in the state, only 48,596 acres have been occupied for farming and of this amount less than 8,000 acres is improved land, representing a farm acreage of less than 10% of the area of the county. The value of the farm land together with the buildings and other improvements is \$576,216. With the exception of that part bordering on Lake Superior, the surface of the county is irregular and broken. The soil of the northern half of the county is a fine grained and heavy red clay. This soil, like the red clay regions of Ashland, Bayfield and Brown counties, owes its origin to a sediment once deposited there by the Great Lakes. The central and western part of the county is a clayey loam. The surface is more or less rolling, but not to an extent as to interfere with tillage. There are sections where the soil is stony, but where cleared, good grain, grasses and corn are produced, but it is too coarse to develop into the strongest grass and wheat land. There are a few tracts of sandy loam in this region. The soil in the southern and eastern part is of a sandy nature, coarse and open in texture, which to produce the best results requires some irrigation. These lands which are low in fertility are best adapted to sheep herding. There were practically no attempts at farming in this county prior to 1890. In 1905 the principal crops were hay, oats and corn. The vast tracts of unimproved land which can be made tillable can be purchased at prices ranging from \$5 to \$15 per acre. The price of improved land varies from \$25 to \$50 per acre. Superior is

the county seat and the second largest city in the state. The following table shows the population of the cities, villages and towns in the county in 1905.

DOUGLAS COUNTY.

TOWNS, CITIES AND VILLAGES.	Families.	AGGREGATE POPULATION.			COLOR.			Ex-soldiers and sailors.	Militia.
		Male.	Female.	Total.	White.	Colored.	Indians.		
Brule	293	999	710	1,709	1,708	1	...	4	507
Gordon	210	759	313	1,072	1,007	...	65	12	345
Nebagamon	581	1,671	1,129	2,800	2,785	*1	14	5	673
Superior	294	803	564	1,367	1,366	1	...	2	247
Superior, city:									
ward 1.....	558	1,615	1,294	2,909	2,878	1	30	13	518
ward 2.....	387	1,153	960	2,113	2,079	13	21	3	507
ward 3.....	269	678	575	1,253	1,186	67	...	...	342
ward 4.....	1,202	6,297	2,970	9,267	9,227	†40	...	10	4,120
ward 5.....	1,261	3,264	3,067	6,331	6,301	†29	1	13	1,482
ward 6.....	655	1,922	1,611	3,513	3,480	32	1	10	1,224
ward 7.....	989	2,283	2,438	4,721	4,687	33	1	11	1,047
ward 8.....	237	954	766	1,720	1,720	...	...	5	458
ward 9.....	604	1,612	1,554	3,166	3,166	...	...	3	627
ward 10.....	263	982	576	1,558	1,548	...	10	...	533
Total, city..	36,551	...	...	...	...	...	...	...	...
Total	7,806	24,972	18,527	43,499	43,138	218	143	91	12,630

*1 Chinaman.

†10 Chinamen.

‡1 Chinaman.

BRULE.

Brule, Douglas Co. Not incorporated. Population, 200. On the North-ern Pacific Ry., 26 miles southeast of Superior, the county seat and 8 miles from Iron River, Bayfield county, the nearest banking point; 36 miles from Ashland and 193 miles from St. Paul. Express, Pacific. Telegraph and telephone. Ship-ping facilities and passenger service good.

Has 1 general store and 1 confectionery store, schools em-ploying 2 teachers, 1 hotel with a capacity for 40 guests. One physician is located here.

Wood is used for fuel and is obtained in large quantities from the cut-over lands in the adjacent country. Quite a number of men, women and young persons could be secured in the village and surrounding country to work in factories. Such raw ma-terials as vegetables, fish, and berries could be furnished for canning. The natural products of the country are clay and sand in large quantities, and a small amount of timber. A canning factory would be best suited to the village; a hotel is also needed.

The country surrounding the villages is good for farming purposes and only about 30% of the land suitable for crop

raising is improved. Nearly $\frac{1}{3}$ of the land is rough and about one fourth is level and free from stone. The remainder is about equally divided between swamps and sand.

HAWTHORN.

Hawthorne, Douglas Co. Population, 200. An unincorporated village on the C. St. P. M. & O. Ry., 17 miles southeast of Superior, the county seat and banking point; 139 miles from Eau Claire and 159 miles from St. Paul. American Express. Telegraph and telephone. Good shipping facilities.

Has 2 general merchandise stores, 2 hotels, 2 boarding houses, and a school employing 2 teachers. No manufacturing industries are located here.

Wood is used for fuel. The vicinity could furnish a limited number of men to work in factories. Timber is the only natural product that could be supplied to the town. The village is in need of a woodenware factory.

About one-half of the adjacent country is suitable for farming and only a small per cent is improved. The land produces abundant crops of grass, small grain and vegetables, and is well adapted to dairying.

LAKE NEBAGAMON.

Lake Nebagamon, Douglas Co. Incorporated. Population 1,500. On the Duluth, South Shore and Atlantic, and H. N. & S. Ry's., 29 miles from southeast of Superior, the county seat; 141 miles from Eau Claire and 158 miles from St. Paul. Express, Western. Good facilities for handling and shipping freight and 4 passenger trains daily.

Has electric lights, a bank, drug store, 3 groceries, 1 hardware, 2 dry goods and 3 clothing stores, 1 laundry, jewelry shop, tailor shop, 4 hotels, Catholic, Methodist and Presbyterian churches, good schools employing 6 teachers, a weekly newspaper, 2 lawyers and 1 physician, blacksmith shop and livery stable.

Situated on a beautiful lake the village is an ideal summer resort. The streets are well kept and shaded, a beautiful public park, nice public buildings and business blocks add greatly to the attractions. The village is in need of a first class hotel and a small saw mill.

Wood is obtained from the adjacent country and coal from Superior. Help can be secured in the village and surrounding country. Vegetables could be supplied in sufficient quantities for canning. The land adjacent to the village is suitable for farming and small sections are improved. The soil is about 10%

level and stony, 10% swamps and 25% sandy, the remainder being level and free from stone.

POPLAR.

Poplar, Douglas Co. Not incorporated. Population, 200. On the Poplar river and Northern Pacific Ry., in Brule township, 16 miles southeast of Superior, the judicial seat and nearest banking point; 51 miles from Ashland, 136 miles from Eau Claire and 198 miles to St. Paul. Express, Pacific. Telephone and telegraph. Shipping facilities good.

Has 2 general stores, good schools employing 3 teachers, 3 churches and a creamery.

Wood is used for fuel supplied by the adjoining country. Coal can be obtained at Superior. A limited amount of help could be secured to work in factories. Fruit and vegetables could be supplied for canning. Red clay is one of the natural products. The village needs a small hotel or boarding house, and would be a good location for a blacksmith.

The country surrounding the village is good for farming purposes and only about 25% of the lands suitable for crop raising is improved. The soil is red clay and the land is nearly all level and free from stone. Dairying is the chief industry and a new creamery has just been completed.

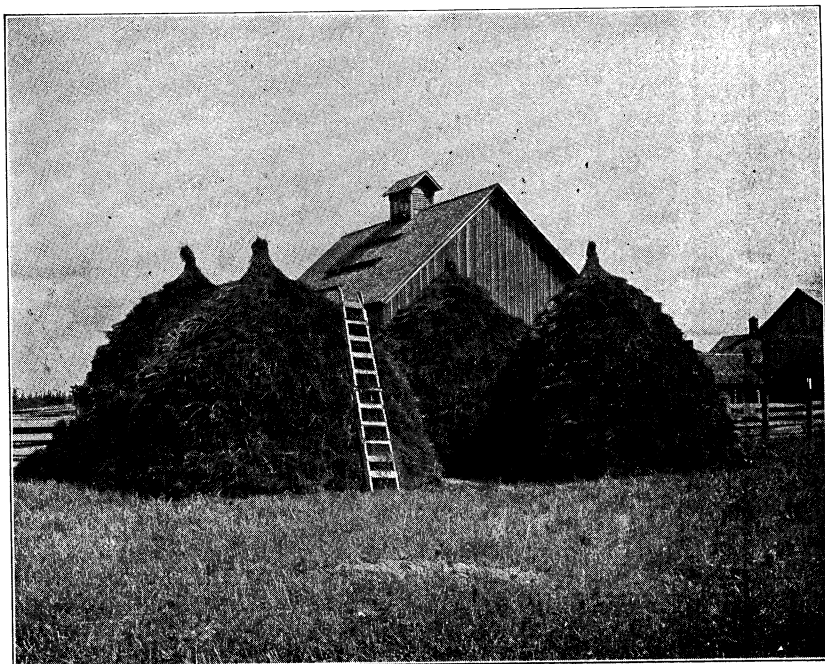
SOLON SPRINGS.

Solon Springs, Douglas Co. Not incorporated. Population, 300. On the C., St. P. M. & O. Ry., and on the St. Croix river, 30 miles southeast of Superior, the county seat, and 17 miles from Nebagamon, the nearest banking point; 112 miles from Eau Claire, and 139 miles from St. Paul. Express American. Telegraph and telephone connections. Shipping facilities and passenger service good.

Has 2 grocery stores, 2 dry goods stores, a school employing 1 teacher, Catholic church, 3 hotels, one physician and one lawyer.

An undeveloped water power estimated at 500 H. P. could be utilized. Wood is used for fuel obtained from the surrounding country at reasonable prices. A limited amount of help could be secured in the vicinity to work in factories. Fruit and vegetables could be supplied for canning. Pottery and brick clay, small pine and hardwood timber are the natural products. The village is in need of a first class hotel and is asking for a furniture factory.

Solon Springs is located on the banks of St. Croix lake from which it is separated by a grove of natural pine. Has a public park, and the shores of the lake are dotted with summer cottages. The country surrounding the village is suitable for farming and only a very small portion is improved.



THE RESULT OF TEN YEARS LABOR AFTER BEGINNING IN SOLID WOODS.

The soil is a light sandy loam, about 85 per cent of the land being level and free from stone. All kinds of grasses, small grain and vegetables are grown in abundance.

SUPERIOR.

Superior, Douglas Co. Population, 36,551. Located on Superior, St. Louis and Allouey bays at the mouth of the St. Louis River, 179 miles from Minneapolis and directly across the river from Duluth. C. M. & St. P. Ry.; C. St. P. M. & O. Ry.; D. S. S. & A. Ry.; Gt. N. Ry. and W. C. Ry. Two other railroads are making surveys preparatory to entering the city. Superior possesses one of the finest natural harbors on the great lakes, and steamship lines, both freight and passenger, connect it with all the large lake ports. Street railway system and electric line to Duluth. Waterworks, gas and electric plants. Telephone system. Western Union, North American and Postal telegraph. Adams, American, Great Northern, Northern Pacific, Southern, United States and Western express companies.

The city of Superior occupies a commanding site at the head of the lakes and is laid out on a very liberal plan, in anticipation of a very rapid growth in the future. Owing to its excellent harbor Superior soon became the western terminus of the lake trade resulting in extensive railroad facilities and a vast commerce. The harbor statistics of this city for

1905 show 1,999 arrivals with a net tonnage of 4,573,060 tons, and 1,992 clearances with a net tonnage of 4,535,270 tons.

Superior possesses some of the largest coal and ore docks in the world, being situated near the great iron mines of Minnesota, Wisconsin and Michigan and is one of the largest coal distributing ports on the great lakes. Many large grain elevators are located here. During 1905 there was handled at this city 5,008,446 tons of ore, 23,000,000 bushels of grain and 266,760 tons of flour.

There is a large amount of land in this city with exceptional shipping facilities both by rail and water. Free sites can be secured by substantial industrial concerns. Labor can be obtained from the surrounding country. Clay, peat, sand, stone, ore and timber can be obtained in abundance and are found within a short distance from the city. The city, through its commercial and professional organizations offers every reasonable inducement for the location of new industries. Any industry using wood or iron as a raw material is suitable for the place.

In 1905 there were in Superior 72 manufacturing establishments with a capitalization of \$5,768,352, employing 1,343 men and having a total output of \$6,356,981. The chief manufacturing interests include saw and planing mills, iron works, ship-building, foundry and machine shop products, extensive flour mills and furniture factories. Fishing is also an important industry.

The city has an excellent public school system with an enrollment of 6,700 pupils, is the location of a state normal school, possesses a large public library, two theaters, first class hotels, five banks, two daily papers and six weeklies and over forty churches of all denominations. Nearly all the secret and benevolent societies have a full representation. The Superior Commercial Club and the Board of Trade, comprising the business and professional men, are active in advertising the many natural advantages of the city.

DUNN COUNTY.

Dunn county is located in the west central part of the state. The area of this county is 844 square miles. The population in 1905 was 26,074, a gain of 1,031 over 1900. About one-fifth

of the population is of foreign birth, nearly all of which are Norwegians or Germans. The farm area in 1905 was 438,328 acres, of which amount 218,434 acres are improved land, or no more than 40% of the area of the county. The value of the farms in 1905, including improvements, was \$11,446,961, as compared with only \$4,647,470 in 1900. The soil of the eastern half and central parts of the county is rather diversified in nature, though in general light and porous. In the central part there are several island-like bluffs which support a vigorous vegetation. Nearly all the bluffs and ridges in this region are quite productive. The trees, which are oak, poplar, red cedar and spruce, are small and scattering except along the streams. There are many old lake bottoms or water courses, and some irregular areas of clay soil which support a heavier growth and give productive land. In the northern part the timber has been heavier with an increased number of pine. Patches of prairie are found in nearly every township. The slopes of the hills and lower barrens are frequently covered with blueberries, blackberries and raspberries. Bordering nearly every stream in the region are more or less extensive bottom lands producing well-known marsh vegetation and are generally used for hay and meadow lands. Ledge marshes are in the minority. In the southeastern part of the county there is some prairie loam. In the western part the soil is a sandy loam, being a continuation of the hard timber belt of eastern St. Croix county. The soil where cleared of the oaks, maples and elms which thickly covered it, has proved to be among the best soils in the state and well adapted to general farming, dairying and stock raising. Along the Red Cedar river the soil is generally sandy. The chief crops and their acreage in 1890 and 1905 are as follows:

	Acreage in 1890.	Acreage in 1905.
Potatoes	2,733	4,416
Hay	43,461	49,587
Corn	23,995	26,203
Oats	33,824	57,992
Barley	470	4,674
Rye	3,808	4,805
Wheat	8,951	3,862

There are 5 cheese factories and 16 creameries in the county. The unimproved hilly soil ranges in price from \$10 to \$20 per acre, and where improved, the price ranges from \$50 to \$90 per acre, with some sales at as high as \$100 per acre. The principal city is Menomonie, which is also the county seat. The following table shows the population of the towns, cities and villages for 1905:

DUNN COUNTY.

TOWNS, CITIES AND VILLAGES.	Families.	AGGREGATE POPULATION.			COLOR.			Ex-soldiers and sailors.	Militia.
		Male.	Female.	Total.	White.	Colored.	Indians.		
Colfax	133	419	328	747	747	.....	.....	3	142
Colfax, village	134	315	325	640	64	.....	.....	6	114
Dunn	252	682	579	1,261	1,261	.....	.....	13	234
Eau Galle	285	736	687	1,423	1,423	.....	.....	23	237
Elk Mound	184	508	426	934	934	.....	.....	8	168
Grant	131	375	329	704	704	.....	.....	3	151
Hay River	107	564	290	654	654	.....	.....	4	104
Lucas	169	425	390	815	815	.....	.....	4	102
Menomonie	364	1,007	874	1,881	1,880	1	.....	17	328
Menomonie, city:									
ward 1.....	209	534	531	1,065	1,065	.....	.....	3	170
ward 2.....	237	548	595	1,143	1,143	.....	.....	12	237
ward 3.....	264	528	711	1,239	1,238	*1	.....	17	155
ward 4.....	459	1,003	1,023	2,026	2,026	.....	.....	17	340
Total, city...5,473									
New Haven	153	357	343	700	700	.....	.....	12	127
Otter Creek	86	201	197	398	398	.....	.....	3	89
Peru	73	204	166	370	370	.....	.....	1	71
Red Cedar	216	708	652	1,361	1,359	1	.....	5	213
Rock Creek	129	363	308	671	671	.....	.....	4	111
Sand Creek	143	395	343	738	738	.....	.....	4	128
Sheridan	110	327	304	631	631	.....	.....	5	110
Sherman	155	422	406	828	828	.....	.....	9	123
Spring Brook	248	698	583	1,281	1,281	.....	.....	14	254
Stanton	266	628	615	1,243	1,243	.....	.....	20	186
Tainter	109	301	244	545	545	.....	.....	4	121
Tiffany	349	541	551	1,092	1,092	.....	.....	16	192
Weston	215	557	510	1,067	1,067	.....	.....	10	206
Wilson	133	370	248	618	618	.....	.....	2	151
Total	5,213	13,516	12,558	26,074	26,071	3	.....	239	4,558

*Japanese.

BOYCEVILLE.

Boyceville, Dunn Co. A small village on the Wisconsin Central railroad, 15 miles northwest of Menomonie, the judicial seat, and 5 miles from Downing, the nearest bank location. Express, U. S. Telegraph and telephone. Shipping facilities good.

Has no water power. Has three general stores, one hotel, a graded school employing two teachers, Lutheran and Methodist

Episcopal churches, and a physician. Can be supplied with plenty of clay, sand, stone and timber.

The village is surrounded by a good farming country and about one-half of the land suitable for crop raising is improved.

The soil is a clayey and sandy loam and about 50 per cent is level and free from stone.

CEDAR FALLS.

Cedar Falls, Dunn Co. Population, 200. An unincorporated village on Red Cedar river, 5 miles northeast of Menomonie, the county seat, banking point and nearest railway station, 25 miles from Eau Claire, 75 miles from St. Paul and 100 miles from La Crosse.

Has a water power of some importance. Two telephone lines pass through the village. There is one general store, a feed mill, one hotel, a graded school employing 3 teachers, a boarding house and a blacksmith shop. This would be a good location for a small factory that could utilize the water power. There is a dam already built. The natural products are clay, sand, timber and stone. Help could be secured in the vicinity.

The surrounding country is a first-class farming section. On the east side of the river is a fine prairie country with a rich black soil and very nearly all improved. The west side of the river at one time was a heavily timbered country and at present about 50 per cent of the land is improved. The land is rolling and the soil is a deep rich clay.

COLFAX.

Colfax, Dunn Co. Population, 640. 18 miles from Menomonie, the county seat and 22 miles from Eau Claire. Wisconsin Central Railway. There are no electric lines. Electric lighting plant. There is a good water supply for domestic and manufacturing purposes. There is no gas plant. Telephone connection. Western Union telegraph. National Express.

Colfax is located on the Red Cedar river, a water power stream, the power being practically all utilized. This village is dependent almost entirely upon the trade from the surrounding country which is a well settled agricultural community. Potatoes are the leading farm product. There are located here one bank, an elevator, a starch factory and a feed mill. There are two churches and a weekly newspaper. A canning factory or a woodworking concern would find this city an excellent location. The hotel accommodations are adequate.

DOWNING.

Downing, Dunn Co. Population, 500. A village in Tiffany township, on the Wisconsin Central railroad, 22 miles northwest of Menomonie, 73 miles from Minneapolis, 160 miles from Superior and 52 miles from Eau Claire. Express, United States. Telegraph and telephone. Shipping facilities and passenger service good.

Has electric lights, a bank, drug store, 4 grocery stores, a hardware store, one department and two dry goods stores, 2 hotels and a boarding house; graded schools employing 4 teachers; one physician and a lawyer, German Lutheran and Methodist churches.

Steam power would have to be used for manufacturing. Wood is used for fuel, obtained from the adjacent country at reasonable prices. There is plenty of available help here. This would be a good location for a canning factory, wooden box and tub factories.

The surrounding country is good for farming and only about 50 per cent of the land suitable for crop raising is improved. The country is rolling with a small portion sandy and swampy.

DOWNSVILLE.

Downsville, Dunn Co. Not incorporated. Population, 200. On the C., M. & St. P. Ry., in Dunn township, 9 miles south of Menomonie, the county seat and nearest banking point; 31 miles from Eau Claire, 85 miles from Minneapolis and 92 miles from La Crosse. Express United States. Telegraph and telephone connections. Good freight facilities and passenger service.

Has 2 drug stores, 2 grocery stores, 2 general merchandise stores, graded school employing 3 teachers, 1 physician, 1 hotel and 3 boarding houses. Wood is used for fuel and is obtained from the surrounding country. The country surrounding the village is good for farming, although quite rough. About 25 per cent of the land suitable for crop raising is improved.

EAU GALLE.

Eau Galle, Dunn Co. Population, 250. A village on the Eau Galle river, in Eau Galle township, 18 miles southwest of Menomonie, 6 miles from Durand, Pepin county, the nearest banking and shipping point, and 30 miles from Eau Claire. Telephone connections. Stage daily to Durand.

Has a small water power, electric lights, 1 drug store, 2 grocery stores, 1 hardware store, 2 dry goods stores, 2 wagon and blacksmith shops, feed mill, creamery, graded school employing 3 teachers, 1 physician, 2 boarding houses, Catholic and Methodist churches. Wood is used for fuel, obtained from farmers in the vicinity. Vegetables, clay, sand, timber and limestone can be had. A number of men, women and young persons could be se-

cured to work in factories. This is a good location for a stove mill.

The adjacent country is good for farming and about 60 per cent of the land suitable for crop raising is improved. The soil is a sandy loam, and about 50% of the land is level and free from stone. 20% is rough and 30% sandy.

ELKMOUND.

Elk mound, Dunn Co. Population, 250. A village on the C. St. P. M. & O. Ry., 12 miles east of Menomonie, the county seat, 12 miles from Eau Claire, 88 miles from Minneapolis and 167 miles from Superior. Express, American. Telegraph and telephone. Shipping facilities good. Six passenger trains daily.

The village has a bank, drug store, 3 grocery stores, 2 hardware stores, 2 general merchandise stores, graded school employing 2 teachers, hotel and boarding house, Congregational church, 1 physician, blacksmith shop and a flax mill.

This would be a good location for a canning factory as the country can furnish plenty of vegetables for canning. The village can be supplied with building stone and some timber. Help can be secured in the village and adjacent country. Better hotel accommodations are needed.

Elk mound is surrounded by a good farming country and about all the land suitable for crop raising is improved. About 75% of the land is level and free from stone.

MENOMONIE.

Menomonie, Dunn Co. Population, 5,473. An incorporated city located on the C. M. & St. P. and the C. St. P. M. & O. Ry's and on the Red Cedar river in Dunn county, of which it is the judicial seat; 27 miles from Eau Claire, 70 miles from St. Paul, 177 miles from Superior, and 240 miles from Milwaukee. American and United States Express. Telegraph and telephone. Shipping facilities and passenger service good.

The city has a good system of water works and a large water power not utilized. Has gas and electric light plants, 3 banks, 3 drug stores, 3 grocery stores, 3 hardware stores, 3 department stores, 1 dry goods store, laundry, 3 hotels, a number of boarding houses, churches of all the leading denominations, excellent schools, the Stout Manual training school, a free public institution ranking among the best in the state. A magnificent memorial building contains a library of 8,000 volumes. The manufacturing industries comprise grist mills, planing mills, foundry and machine shops, gasoline engine plant, 3 brick companies

making about 30 million bricks annually. Has two weekly newspapers. There is a fine opening here for a tile factory.

Wood and coal are used for fuel. Wood is obtained at the local markets. Plenty of help can be secured in the city and adjacent country. Vegetables can be supplied for canning. There are inexhaustible beds of clay suitable for brick and pottery. The city is a good location for the following industries: Beet sugar factory, canning factory, cold storage plant, tile and woodenware factories.

The city is in the midst of a rich farming country. The soil is a black loam west of the city, clayey loam north and sandy loam south. About all of the land suitable for crop raising is improved. Dairying and stock raising is an important industry. The soil is adapted to vegetables and root crops.

RIDGELAND.

Ridgeland, Dunn Co. Population 100. A village on the M. St. P. & S. Ste. M. Ry., in Wilson township, 28 miles north of Menomonie the county seat and $6\frac{1}{2}$ miles from Dallas the nearest banking point; 115 miles from St. Paul, 18 miles from Barron, 144 miles from Superior. Express, Western. Telegraph and telephone. Shipping facilities and passenger service fair.

Has 2 general merchandise stores, a hotel, a graded school employing 2 teachers, 1 physician, a creamery, blacksmith shop and a lumber yard.

Steam power would have to be used for manufacturing. Vegetables could be supplied for canning, and clay, sand, timber and stone are the natural products. A small amount of help can be secured.

There is an opening here for a starch or canning factory, and a heading mill. It would be a good location for a harness and shoe shop.

The village is new but the country is quite thickly settled with a thrifty and well-to-do class of farmers. The soil is very fertile and produces large crops of hay and vegetables. Dairying and potato growing are the principal industries.

EAU CLAIRE COUNTY.

Eau Claire county is located in the west central part of the state. The area of the county is 620 square miles, with a population in 1905 of 33,519, showing a gain of 1,827 over 1900. Over one-fourth of the population is of foreign birth, Norwegians and Germans constituting the larger number. In 1905 the farm area was 271,360 acres, or about 68% of the area of the county. Of this amount only 166,433 acres were improved. In 1890 the farm area was 225,108 acres, of which 133,249 acres were improved. The value of the farms in 1905 including improvements was \$7,612,360, while in 1890 it was but \$3,480,190. With the exceptions of the valleys of the Eau Claire and Chippewa rivers and their tributaries Eau Claire county has a comparatively level surface. The soil in the northwestern part of the county is a clayey loam of the lighter variety and supporting a growth of hardwood and hemlock. In the valleys of the Eau Claire and Chippewa rivers, for several miles on each side of the stream the soil is a sandy loam, with the exception of the west, central part where there is a tract of prairie loam. The pine which covered a large part of this county has all been cut. The chief crops of the county and the acreage devoted to each in 1890 and 1905 were approximately as follows:

	Acreage in 1890.	Acreage in 1905.
Wheat	7,780	4,556
Corn	15,899	14,154
Oats	27,023	47,609
Barley	1,158	4,152
Rye	4,342	5,427
Hay	34,482	39,178

Buckwheat is also an important crop. There were in 1905 only 1 cheese factory and 9 creameries in the county. The prices for unimproved tillable land varies from \$5 to \$20 per acre. For improved farm land the range of prices is from \$25 to \$75 per acre. Eau Claire is the largest city and county seat. The following table shows the population statistics of the cities, villages, and towns in the county for 1905:

EAU CLAIRE COUNTY.

TOWNS, CITIES AND VILLAGES.	Families.	AGGREGATE POPULATION.			COLOR.			Ex-soldiers and sailors	Militia.
		Male.	Female.	Total.	White.	Colored.	Indians.		
Altoona, city	174	385	332	717	717	.....	.....	8	124
Augusta, city	341	661	766	1,426	1,418	8	.....	26	220
Bridge Creek	253	712	623	1,335	1,335	.....	.....	20	240
Brunswick	128	373	291	664	664	.....	.....	12	133
Clear Creek	131	426	371	797	797	.....	.....	5	134
Drammen	159	444	369	813	813	.....	.....	9	159
Eau Claire, city:									
ward 1.....	217	800	690	1,490	1,483	7	.....	.....	.....
ward 2.....	274	819	818	1,637	1,625	*12	.....	.....	.....
ward 3.....	496	1,043	1,264	2,307	2,305	2	.....	.....	.....
ward 4.....	192	498	439	937	935	2	.....	.....	.....
ward 5.....	365	747	795	1,542	1,542	.....	.....	.....	.....
ward 6.....	508	980	1,158	2,138	2,138	.....	.....	.....	.....
ward 7.....	484	1,064	1,104	2,168	2,168	.....	.....	.....	.....
ward 8.....	386	1,171	962	2,133	2,128	5	.....	.....	.....
ward 9.....	463	1,207	1,159	2,366	2,366	.....	.....	.....	.....
ward 10.....	376	999	1,120	2,019	2,019	.....	.....	.....	.....
Total, city..18,737									
Fairchild	112	299	264	563	563	.....	.....	162	3,276
Fairchild, village	180	392	414	806	806	.....	.....	3	70
Lincoln	313	973	829	1,802	1,802	.....	.....	9	146
Luddington	214	496	430	926	925	1	.....	12	356
Otter Creek	137	386	323	709	709	.....	.....	10	148
Pleasant Valley	208	589	461	1,050	1,050	.....	.....	7	157
Seymour	114	318	283	586	586	.....	.....	3	213
Union	173	634	492	1,126	1,126	.....	.....	7	93
Washington	292	789	673	1,462	1,462	.....	.....	4	159
Total	6,690	17,204	16,315	33,519	33,482	37	.....	304	5,880

*3 Chinamen.

ALTONA.

Altoona, Eau Claire Co. Population, 717. An incorporated village on the C. St. P. M. & O. Ry., the Eau Claire river and Otter Creek in Washington township, $3\frac{1}{4}$ miles east of Eau Claire, the nearest banking point. American Express. Telegraph and telephone. Shipping facilities and passenger service good.

This village has 2 general merchandise stores, graded school employing 4 teachers, Methodist Episcopal church, 2 hotels, 2 boarding houses, 3 restaurants, barber shop, meat market, etc.

No water power here; coal is used for fuel, obtained at Eau Claire or Superior. Plenty of men, women and young persons could be hired to work in factories. Vegetables are the only raw materials that could be furnished in sufficient quantities for canning. Good location for vegetable canning factory.

The village is surrounded by a good farming country and about $2/3$ of the land suitable for crop raising is improved. The soil is a sandy loam. Good crops of vegetable and potatoes are produced.

AUGUSTA.

Augusta, Eau Claire Co. Population, 1,426. An incorporated city located on the main line of the C. St. P. M. & O. Ry., 23 miles southeast of Eau Claire, the county seat, 110 miles from St. Paul, 161 miles from Madison and 250 miles from Milwaukee. American Express. Telegraph and telephone. Excellent shipping facilities and passenger service.

Has electric lights, 1 bank, 2 drug stores, 2 hardware stores, 4 general merchandise stores, 3 hotels, 1 jewelry store, 2 millinery stores, 2 restaurants, 3 meat markets, 3 barber shops, 3 harness shops, 4 blacksmith shops, grist mill, planing mill, 2 wagon shops, 3 elevators, brick and tile works, Baptist, Catholic, Lutheran, Methodist and Universalist churches, a new \$27,000 high school building, (10 teachers employed), 4 physicians and 3 lawyers. Two weekly newspapers are published.

Steam power is used. Wood and coal are used for fuel. Wood is obtained from the adjacent country and coal is shipped in. A canning factory could be furnished with fruit and vegetables. Clay, sand, timber and stone are the natural products. The city and surrounding country can furnish any amount of help needed. There are no idle factories and no failures have occurred here in past years. There is a good opening here for a furniture and boot and shoe factory or canning factory. The surrounding country is good for farming and about 60 per cent of the land suitable for crop raising is improved. About 50 per cent of the land is level and free from stone, 20 per cent rough, 5 per cent swamp and 25 per cent sandy.

EAU CLAIRE.

Eau Claire, Eau Claire Co. Population, 18,737. Is a flourishing city located on both sides of the Chippewa and Eau Claire rivers, and on the C. St. P. M. & O., the C. M. & St. P., and the Wisconsin Central Ry's., in the central part of western Wis., and in the northwest part of Eau Claire county of which it is the county seat. Is 84 miles east of St. Paul, 155 miles from Superior, 184 miles from Madison, 266 miles from Milwaukee and 351 miles from Chicago. American, National and United States Express. Telegraph and telephone. Shipping facilities and passenger service unexcelled.

The name is of French derivation and signifies clear water. The city has 4 public parks, a good sewerage system, paved streets, an electric fire alarm system, an efficient street railway system, having interurban connections with the city of Chippewa Falls, 12 miles north. Midway between these two cities is Lake Hallie, a summer resort with attractive surroundings. The city is lighted by electricity, has gas plant, an abundant supply of pure water, an immense water power, 3 banks, 9 drug stores, 20 grocery, 6 hardware, 1 department and 4 dry goods stores, and 2 laundries. The leading religious denominations are well repre-

sented. There are ample hotel accommodations and an opera house costing about \$60,000 with a seating capacity of 1,200; a high school building costing \$80,000, an excellent system of ward schools, a fine public library and a hospital under the care of the Sisters of Mercy. There are 4 weekly and 2 daily newspapers. The chief water power is supplied by a dam across the Chippewa river, having 18 feet head, and 2 dams across the Eau Claire river supply the linen and other mills with power. The Chippewa river is the second largest river in the state and receives the waters of the Eau Claire river at this point. These rivers spanned by good bridges, are studded with numerous manufacturing institutions, consisting principally of large saw mills, 2 foundries, a pulp and paper mill, a refrigerator factory, a linen mill, 2 furniture factories, a fruit canning establishment, 3 shoe factories, a box factory, 2 breweries, a porkpacking house, a tannery, bottling works, candy factory, 2 carriage and 1 bedding factory. Among recent manufacturing enterprises that have been established in the city are a stave and heading mill, shoe factory and a lumber company.

Wood and coal are used for fuel; the former is obtained in the vicinity. Plenty of help can be secured in the city. Fruit and vegetables are furnished for canning purposes. The city can be supplied with clay for the manufacture of brick, tile and pottery. There are no idle factories or workshops in the city. There are good openings here for the manufacturing of wood, iron and clay products.

The city is surrounded by a good farming country and the land suitable for crop raising is nearly all improved. The soil is a sandy loam and is formed for the most part of disintegrated Potsdam sandstone with vegetable mould in the composition. The surface is level and free from stone.

FAIRCHILD.

Fairchild, Eau Claire Co. Population, 806. An incorporated village on the C. St. P. M. & O. Ry., and the F. & N. E. Ry., in Fairchild township, 32 miles southeast of Eau Claire, the county seat, 119 miles from St. Paul, 152 miles from Madison and 240 miles from Milwaukee. American Express. Telegraph and telephone. Shipping facilities good.

Has a bank, 2 general stores, Catholic, German Lutheran and Methodist churches; high school employing 8 teachers, 1 hotel, 2 boarding houses, 1 physician, 1 lawyer, 1 dentist, a blacksmith and wagon shop, creamery, furniture and undertaking establishment,

meat market, restaurant, barber shop, etc. There is an opening here for a canning factory or woodenware factory. A weekly newspaper is published.

There is no water power. Wood is used for fuel which is supplied by the surrounding country and local mills. A limited amount of help, mostly men, could be secured here. All kinds of vegetables could be furnished for canning factory. The village can be supplied with timber.

The soil of the adjacent country is a sandy loam and produces good crops. About half of the land suitable for crop raising is improved. Near the village the land is nearly all level and free from stone, 20 per cent is swampy and 50 per cent sandy.

FALL CREEK.

Fall Creek, Eau Claire Co. Population, 520. An unincorporated village located on the main line of the C. St. P., M. & O. Ry., in Lincoln township, 14 miles southeast of Eau Claire, the county seat, 100 miles from St. Paul, 170 miles from Madison and 259 miles from Milwaukee. Good shipping facilities and passenger service. American Express. Telegraph and telephone.

Has a bank, 1 drug store, 3 general merchandise stores, 2 hardware stores and harness shops combined, 1 clothing store, 3 hotels, 3 churches, a graded school employing 4 teachers, 2 physicians, blacksmith shops, meat markets, barber shops and furniture store.

There is no water power. Help can be secured in the village and vicinity. Vegetables can be supplied for canning purposes. Clay, sand, timber and stone are the natural products.

The adjoining country is good for farming and all the land suitable for crop raising is improved. The soil is a sandy loam, about 65 per cent being level and free from stone, 20 per cent rough and 15 per cent sandy.

FLORENCE COUNTY.

Florence county is located in the northeastern part of the state on the Michigan boundary line. The area of the county is 498 square miles. The population in 1905 was only 3,522, which was a gain of 325 over 1900. Over one-third of the population is of foreign birth, of which the Swedes constitute

the larger part. This is one of the most undeveloped counties in the state, the total farm acreage, 17,717 acres, being less than 6% of the area of the county. There are only 5,692 acres of improved farm land in the county. The value of the farms with their improvements in 1905 was \$208,170. In 1890 the total farm area was 13,388 acres of which only 1,650 acres were improved. The value in 1890 was \$117,690. The surface of the county is rolling and more or less hilly. The soil covering the western two-thirds of the county is a light clayey loam. In the eastern part the soil is a sandy loam, while along the Menomonee River it is quite sandy for several miles from the river. There is a considerable growth of hardwoods in the county. In an agricultural way very little has been accomplished. A small amount of wheat and barley is grown but oats is the principal crop, the area devoted to this grain in 1905 being about 1,000 acres. About 3,200 acres are devoted to hay and grasses. A considerable portion of this county could very profitably be devoted to sheep raising. The price for unimproved timber land averages \$15 per acre, and for unimproved tillable land the average price is \$8 per acre. Improved farm lands are worth about \$25 per acre. Florence is the largest city and county seat. The following table shows the population of the different cities, villages, and towns in the county for 1905:

FLORENCE COUNTY.

TOWNS, CITIES AND VILLAGES.	Families.	AGGREGATE POPULATION.			COLOR.			Ex-soldiers and sailors.	Militia.
		Male.	Female.	Total.	White.	Colored.	Indians.		
Commonwealth	130	400	323	723	723	.....	.....	4	138
Florence	337	1,134	807	1,941	1,941	.....	.....	9	532
Homestead	159	540	318	858	858	.....	.....	.....	185
Total	626	2,074	1,448	3,522	3,522	.....	.....	13	855

COMMONWEALTH.

Commonwealth, Florence Co. Population, 500. A village on the C. & N. W. Ry., in Commonwealth township, 1 mile south of Florence, the county seat and banking point. American Express. Telegraph. Shipping facilities fair.

Is a mining town. Has a general merchandise store, a dealer in agricultural implements, a saw mill, a blacksmith, a physician and a graded school with 4 teachers.

There is water power here that could be utilized, estimated at 3,000 horsepower. Plenty of help can be secured in the village and country. About one-half of the surrounding country is suitable for farming and about 1/10 improved. About 50 per cent of the land is sandy, and 10 per cent swampy. Only a small per cent of the country is rough but a great deal of it is stony. The soil is good and the land is covered with hardwood timber, such as maple, elm, basswood, hemlock, spruce, tamarack, black birch, cedar, and small pine.

FLORENCE.

Florence, Florence Co. Population, 1,500. Is an unincorporated city located on the C. & N. W. Ry., on Fisher lake, Florence county, of which it is the county seat; 67 miles northwest of Escanaba, Mich., and 263 miles north of Milwaukee. American Express. Telegraph and telephone. Fair shipping facilities and passenger service.

The city was first settled in 1880. Is located on the banks of Fisher lake, has water works, electric light plant, a bank, drug store, 4 groceries, 2 hardware and 3 general stores, furniture store, 3 hotels, 3 boarding houses, high and graded public school employing 20 teachers, Catholic, Episcopal, German Lutheran, Presbyterian and Swedish Lutheran churches, 2 physicians, 2 lawyers, and numerous shops. A weekly newspaper is published. Iron ore is mined in the adjacent country.

There is a good water power here estimated at 1,500 horsepower not utilized. Wood is used for fuel and is supplied in large quantities from the surrounding country. There is plenty of clay, sand, stone, timber and iron ore in the vicinity. Plenty of help can be secured in the village. This is a good location for a woodenware factory and saw mills. A good hotel is needed.

The surrounding country is good for farming and only about 3000 acres are improved. About 1-3 of the land is level and free from stone. There is some swampy and sandy land.

FOND DU LAC COUNTY.

Fond du Lac county is located in east central Wisconsin at the lower end of Lake Winnebago. The area is 720 square miles. The population in 1905 was 50,825, a gain of 3,236 over 1900. Nearly one-fifth of the population is foreign born, of which number Germans constitute considerably over half. In 1905 the farm acreage was 425,892 acres, practically all of the tillable land of the county. Of this amount 320,016 acres were improved. The value of these farms including improvements was \$27,609,473, as compared with \$18,609,040 in 1890. The topography of the county is rolling and hilly, especially in the southern part but it has been considerably modified by erosion. The soils of the county are largely clayey loam of the lighter varieties. Bordering on Lake Winnebago the soil is a red clay of the heavier variety. This soil extends some miles westward from the lake but not far on the eastern side. In the eastern part of the county there is a belt of very fertile heavy clayey loam. Several large areas of prairie loams exist in the northern and western parts. In the southwest corner there is an area of calcereous sandy loam. Small irregular tracts of marshy soils are found in different parts of the county. The principal crops of the county and the acreage devoted to each in 1890 and 1905 were approximately as follows:

	Acreage in 1890.	Acreage in 1905.
Wheat	33,861	3,285
Corn	24,445	33,369
Oats	45,547	62,325
Barley	43,751	63,734
Potatoes	3,587	58,562
Hay	76,443	58,562

Clover seed is also an important crop in this county. It is one of the foremost wool growing counties in the state. Its dairying interests are represented by 59 cheese factories and 34 creameries. There is very little land in the county which cannot be made tillable and most of it has been partially improved. The average price for such lands is \$50 per acre. For improved land prices range from \$50 to \$100 per acre.

Fond du Lac is the county seat. The following table shows the population statistics of the cities, villages and towns in the county in 1905:

FOND DU LAC COUNTY.

TOWNS, CITIES AND VILLAGES.	Families.	AGGREGATE POPULATION.			COLOR.			Ex-soldiers and sailors.	Militia.
		Male.	Female.	Total.	White.	Colored.	Indians.		
Aito	254	648	585	1,233	1,233				240
Ashford	263	692	649	1,341	1,341			4	254
Campbellsport, village	163	342	372	714	714			11	120
Auburn	229	557	527	1,084	1,084				200
Byron	256	680	547	1,227	1,227				261
Calumet	250	666	694	1,360	1,353		7	5	252
Eden	262	727	603	1,330	1,330			5	246
Eldorado	272	701	627	1,328	1,323			7	233
Empire	161	481	389	870	870				191
Fond du Lac	232	670	585	1,255	1,254		1	10	220
N. Fond du Lac, village	373	1,159	785	1,944	1,944				683
Fond du Lac, city:									
ward 1.....	218	554	495	1,049	1,049				
ward 2.....	240	552	509	1,061	1,057		4		
ward 3.....	260	532	565	1,097	1,097				
ward 4.....	267	590	577	1,167	1,165		2		
ward 5.....	239	529	484	1,013	1,001		12		
ward 6.....	264	535	528	1,063	1,043		20		
ward 7.....	293	536	609	1,145	1,140		5		
ward 8.....	269	550	572	1,122	1,121		1		
ward 9.....	287	533	612	1,145	1,145				
ward 10.....	260	450	573	1,023	1,023				
ward 11.....	249	431	597	1,028	1,022		6		
ward 12.....	253	509	591	1,100	1,100				
ward 13.....	251	519	527	1,046	1,046				
ward 14.....	227	587	488	1,075	1,075				
ward 15.....	263	536	564	1,100	1,100				
ward 16.....	237	520	530	1,050	1,050				
Total, city ..17,284								145	3,046
Forest	211	648	510	1,158	1,158			5	197
Friendship	177	471	402	873	873			8	193
Lamartine	254	631	572	1,203	1,203			11	231
Marshfield	353	1,014	886	1,900	1,900			1	357
Metomen	260	635	577	1,212	1,212			2	259
Brandon, village	210	295	349	644	644			6	93
Oakfield	176	421	411	832	832			4	183
Oakfield, village	165	246	302	548	548			15	75
Osceola	198	590	512	1,102	1,102			7	172
Ripon	229	547	467	1,014	1,014			4	221
Ripon, city:									
ward 1.....	212	411	429	840	840			7	154
ward 2.....	242	464	502	1,056	1,056			10	190
ward 3.....	211	394	484	878	878			14	147
ward 4.....	337	452	585	1,037	1,037			8	158
Total, city ..3,811									
Rosendale	228	545	528	1,073	1,073			6	239
Springvale	224	579	512	1,091	1,091			5	237
Taycheedah	243	663	603	1,266	1,266			7	219
Waupun	242	568	486	1,054	1,054			1	202
Waupun, city:									
ward 5.....	117	212	231	443	443				
ward 6.....	180	230	332	621	631				
Total, city ..*3,111								15	204
Total	11,261	25,871	24,954	50,825	50,767	46	12	338	10,338

*Includes total in Dodge and Fond du Lac counties.

BRANDON.

Brandon, Fond du Lac Co. Population, 641. An incorporated village on the C. M. & St. P. Ry., in Metomen township, 16 miles southwest of Fond du Lac, 27 miles from Oshkosh, 103 miles from Madison, 76 miles from Milwaukee and 161 miles from Chicago. United States Express. Telegraph and telephone. Shipping facilities good. Four passenger trains daily.

Water is supplied from wells. Has gas plant, bank, drug store, 2 hardware stores, 4 general merchandise stores, jewelry store, furniture store, 2 hotels, a boarding house, high school employing 6 teachers, Congregational, Evangelical, German Lutheran and Methodist Episcopal churches, 3 physicians and a lawyer, 2 harness shops, blacksmith shops, 2 grain elevators, butter tub factory, cheese factory and 2 creameries. A weekly newspaper is published.

Steam power is used for manufacturing purposes. Wood and coal are used for fuel, the former being obtained from the farmers in the vicinity and the latter from Milwaukee. Vegetables could be furnished for canning, and clay, sand, peat and stone can be supplied in large quantities. There are several quarries in the vicinity yielding a superior quality of granite. This would be a good location for a canning factory or glove factory, and plenty of help can be secured in the village and surrounding country. A butter tub factory and cheese box factory are idle, caused by the owner having large interests in another line of business. The owner of a flour mill failed here at one time caused by the general depression of business.

Brandon has fine streets and walks, beautiful shade trees, two small public parks, public hall, a \$10,000 high school building, good business buildings and residences.

The village is located in one of the best farming sections in the state and the land is all improved. The soil is a clay loam and is all level and free from stone.



SHEEP CLEARING THE LAND IN NORTHERN WISCONSIN.

MT. CALVARY.

Mt. Calvary, Fond du Lac Co. Population, 400. Not incorporated. A village located on the Sheboygan river, in Marshfield township, 13 miles northeast of Fond du Lac, the county seat and banking point, and 2 miles from Calvary on the C. & N. W. Ry., 27 miles from Sheboygan, 79 miles from Milwaukee and 164 miles from Chicago. American Express. Telegraph and telephone.

Has 3 general merchandise stores, 1 hotel, 1 physician, a flour mill, brewery, blacksmith and wagon shops, harness shop, hardware and furniture store, and a Mutual Fire Insurance company. St. Lawrence college is located here.

No water power. Coal and wood are used for fuel. Wood is obtained in the vicinity and coal at Sheboygan. Such raw materials as fruit and vegetables can be furnished for canning purposes. There are no manufacturing industries of any kind in the village.

The surrounding country is good for farming and most of the land suitable for crop raising is improved. About one-third of the land is rough and stony with a clay subsoil.

CAMPBELLSPORT.

Campbellsport, Fond du Lac Co. Population, 714. An incorporated village located on the C. & N. W. Ry., in Ashford and Auburn townships, 16 miles southeast of Fond du Lac, the county seat, 47 miles from Milwaukee and 132 miles from Chicago. American Express. Telegraph and telephone. Good shipping facilities and passenger service.

Is lighted by electricity, has a bank, drug store, 4 grocery stores, 2 hardware stores, 3 general merchandise stores, 2 furniture stores, flour mill, blacksmith and wagon shops, cigar factory, glove factory, lumber yards, 3 hotels, 3 physicians, 1 lawyer, graded public schools employing 5 teachers, Baptist, Catholic, Methodist and Reformed churches and a weekly newspaper.

Steam power would have to be used here. Wood and coal are used for fuel, both are shipped in, coal from Fond du Lac or Milwaukee. Corn and peas can be supplied for canning and this ought to be a good location for such a factory. Clay, sand and stone are the natural products which can be supplied in any quantity. A limited amount of help can be secured in the village and adjoining country. A cheese box factory failed here some years ago, caused by insufficient capital. The adjacent country is good for farming purposes and about all the land suitable for crop raising is improved. Good clay soil, some swamps near the lakes.

EDEN.

Eden, Fond du Lac Co. Population, 158. Not incorporated. A small village on the C. & N. W. Ry., in Eden township, 7 miles southeast of Fond du Lac, the county seat and banking point, 25 miles from Oshkosh, 56 miles from Milwaukee and 141 miles from Chicago. American Express. Telegraph and telephone. Shipping facilities and passenger service good.

Has 4 general merchandise stores, 1 hardware store, 1 hotel, 2 boarding houses, 1 resident physician, blacksmith shops, barber shops, etc.

Steam power would have to be used. Coal is used for fuel obtained at Fond du Lac or Milwaukee. Fruit, vegetables and peas can be supplied in sufficient quantities for canning. There is a supply of clay, sand, peat, timber and stone near the village. Plenty of help can be secured in the village and adjacent country. Good location for a cold storage plant.

The surrounding country is good for agricultural purposes and 75 per cent of the land suitable for crop raising is improved. About 50 per cent of the land is level and stony, good clay soil and a small per cent swamps. A large amount of peas are raised and dairying is an important occupation.

FAIRWATER.

Fairwater, Fond du Lac Co. Population, 350. Not incorporated. A village located on the Grand river, and on the C. M. & St. P. Ry., in Metomen township, 25 miles west of Fond du Lac, the county seat, 25 miles from Oshkosh, 81 miles from Milwaukee and 166 from Chicago. United States Express. Telegraph and telephone. Good shipping facilities and passenger service.

Has a bank, drug store, 4 grocery stores, 2 hardware and 3 dry goods stores, 2 hotels, 1 boarding house, graded schools, employing 3 teachers, a physician, Baptist and German Lutheran churches, 2 blacksmith shops, 2 creameries, 2 elevators and a harness shop.

There is a small water power that could be used for manufacturing purposes. Coal is the fuel used, shipped from Milwaukee. A canning factory could be supplied with fruits and vegetables. Clay, sand and stone can be furnished. Some help can be secured in the vicinity.

The village is surrounded by a fine farming country and all the land suitable for crop raising is improved. Has a rich clay soil and is practically all level and free from stone.

FOND DU LAC.

Fond du Lac, Fond du Lac Co. Population, 17,291. The county seat of Fond du Lac county, is located at the southern extremity of Lake Winnebago, on the C. M. & St. P. Ry., the C. & N. W. Ry., and the Wisconsin Central line, 17 miles from Oshkosh, 90 miles from Madison, 64 miles from Milwaukee and 149 miles from Chicago. American, National and United States Express. Telegraph and telephone. Shipping facilities are unsurpassed. It has communication by water through Lake Winnebago and the Fox river into Green Bay, connecting it with the whole chain of lakes. The three railways radiating to all parts of the United States give it all the advantages of the western cities in the sale of its manufactures in eastern markets. Besides the competition afforded by the water route, it is instrumental in regulating freight rates.

The city is lighted by electricity, has a gas plant, water works, an efficient fire department, 4 banks, 8 drug stores, 20 grocery stores, 10 hardware stores, 3 department stores, 7 dry goods stores, 2 laundries, 4 good hotels, 12 boarding houses, churches of all the leading religious denominations, excellent public schools employing 100 teachers. There are 25 physicians, 25 lawyers, 3 daily and 3 weekly newspapers, foundries and machine shops, plow works, carriage and wagon factories, shirt and overall factories, refrigerator, sash, door and blind factories, boiler works, mattress factory, planing mills, canning factory, breweries, file works, furniture factories, box factories, drug mill, one of the largest tannery and leather manufactories in the country, and manufactories of

saw mill machinery, creamery supplies, cigars, brooms, patent medicines, candies, bicycles, etc. This city was one of the pioneer lumbering towns of the state, and, although the supply of pine has been exhausted, there is a large quantity of hardwood timber in the vicinity which is now being utilized for manufacturing purposes. There is an \$85,000 court house, opera house and a young ladies' school. St. Agnes Hospital and Sanitarium, one of the best appointed in the state, was erected at a cost of \$40,000 and occupies the ground adjoining St. Agnes convent. An electric railway connects the city with Oshkosh, Appleton and Green Bay. There are 2 daily, 1 semi-weekly and 2 weekly newspapers.

A first-class hotel is needed. Vegetables are furnished for canning and the city is supplied with clay, sand, stone, peat and timber. There are no idle factories or workshops in the city and no failures in the manufacturing lines have ever occurred. The country adjoining the city is a fine agricultural section and nearly all the land is improved.

The city has fine streets, 2 public parks, plenty of shade trees, good public buildings of all kinds, handsome business blocks and private residences and all the facilities and appointments of a first-class city.

OAKFIELD.

Oakfield, Fond du Lac Co. Population, 548. An incorporated village on the C. & N. W. Ry., in Oakfield township, 9 miles southeast of Fond du Lac, 26 miles from Oshkosh, 81 miles from Madison, 73 miles from Milwaukee and 158 miles from Chicago. American Express. Telegraph and telephone. Good shipping facilities and passenger service.

Has a bank, drug store, 2 grocery stores, 2 hardware stores, 2 general merchandise stores, a furniture and undertaking establishment, 2 hotels, 3 boarding houses, good schools employing 5 teachers, Baptist, German Lutheran, Methodist Episcopal and Protestant Episcopal churches, 4 physicians, 1 lawyer, a free library, a mutual fire insurance company, meat market, 2 blacksmith shops, 2 grain elevators, lumber yard and 2 coal dealers. A weekly newspaper is published.

Steam power would have to be used for manufacturing purposes. Wood, coal, peat and coak are used for fuel. Peat is obtained from a peat plant four miles away and the others

are shipped in. This would be a good location for a canning factory. Plenty of help can be secured in the village and adjacent country. The village can be supplied with clay, sand, peat and stone.

Oakfield is surrounded by a very rich farming country and all the land suitable for crop raising is improved.

RIPON.

Ripon, Fond du Lac Co. Population, 3,811. Incorporated as a city in 1858. Located at the junction of the C. M. & St. P. and C. & N. W. Ry's, 22 miles west of Fond du Lac, 22 miles from Oshkosh, 107 miles from Madison, 83 miles from Milwaukee and 168 miles from Chicago. American and United States Express. Telegraph and telephone. Shipping facilities good. Eight passenger trains daily.

Has a complete system of water works, sewerage, gas and electric lights, 2 banks, 5 general merchandise stores, 4 drug stores, 14 grocery and 3 hardware stores, 4 hotels, 6 physicians and 10 lawyers. The city affords the very best religious and educational advantages. Is the seat of Ripon College, one of the oldest and best known educational institutions in the northwest. Has 2 flour mills, marble works, machine shops and gas engine works, a brewery, 2 pickle factories, knitting works, a wind mill factory, 2 glove and mitten factories, 2 grain elevators, creameries, an agricultural and horticultural implement factory, planing mill for interior wood work, sash, door and blind, office and saloon fixtures and box factories. Two weekly newspapers are published. The city is located in the finest prairie country in the state and is the distributing point for a wide area. Is a great center for the growth and shipment of small fruit, cucumbers, wool, grain, live stock, farm and dairy products.

Steam power is used for manufacturing and coal is used for fuel and can be obtained at Oshkosh, Fond du Lac or Milwaukee. Plenty of help can be secured in the city and vicinity. This would be a good location for a canning factory as large quantities of fruit and vegetables are produced. The city can be supplied with sand, peat and stone.

The city has paved streets, beautiful drives, fine shade trees, nice public buildings and business blocks. Is a city of homes, churches and schools and is only 6 miles from Green Lake, a very attractive summer resort.

The surrounding country is one of the best farming sections

in Wisconsin. The land is level and free from stone and all improved.

ST. CLOUD.

St. Cloud, Fond du Lac, Co. Population, 200. Not incorporated. A village on the Sheboygan river and on the C. & N. W. Ry., in Marshfield township, 22 miles from Fond du Lac, 12 miles from Plymouth the nearest banking point, 26 miles from Sheboygan, 78 miles from Milwaukee and 163 miles from Chicago. American Express. Telegraph and telephone. Shipping facilities good. Six passenger trains daily.

Has 2 general merchandise stores, graded school employing 3 teachers, one hotel, 2 boarding houses, a physician, a shoe factory, cheese factory, saw mill, blacksmith shop, harness shop and barber shop.

There is no water power. Coal and wood are used for fuel. The former is obtained at Sheboygan and the latter from the surrounding country. Clay, sand and timber are the natural products with which the village can be supplied. Help can be secured in the village and adjacent country. This would be a good location for a cheese box factory.

The surrounding country is good for farming and about 50 per cent of the land suitable for crop raising is improved. The land is about 25 per cent rough, 50 per cent level but stony, 25 per cent swampy, 12½ per cent sandy and the remainder level and free from stone.

WAUPUN.

Waupun, Fond du Lac Co. Population, 3,111. A city located on the C. M. & St. P. Ry., being about evenly divided between Dodge and Fond du Lac counties, but is awarded by the postal authorities to the latter. Is 34 miles from Oshkosh, 92 miles from Madison, 69 miles from Milwaukee and 154 miles from Chicago. United States Express. Telegraph and telephone. Shipping facilities and passenger service good. Busses run to Chester, 3 miles distant making regular connections with trains on the C. & N. W. Ry.

Has a system of water works, is lighted by electricity, has 2 banks, 3 drug stores, 8 grocery stores, 4 hardware stores, 2 furniture stores, 1 department and 4 dry goods stores, 2 clothing and 1 shoe store, 2 jewelry stores, 3 hotels, 3 boarding houses, excellent schools employing 15 teachers, churches of the leading denominations, 2 harness shops, 2 elevators, 1 bakery, a steam laundry, a windmill and pump factory, flour mill, plow factory, knitting factory, box factory, shoe factory, 2 carriage works, umbrella factory, cigar factory, creamery, brewery, etc. Two weekly newspapers are published.

There is no water power here, necessitating the use of steam for manufacturing purposes. Coal is used for fuel. Plenty of

help can be secured in the city and surrounding country to work the entire year. Fruit and vegetables can be supplied in sufficient quantities. Clay, sand, peat and stone are the natural products.

The city is located in a rich agricultural section and the land is all under cultivation. Waupun is the site of the state Prison. Has good macadam streets, an abundance of shade trees, public library, opera house, good business blocks and beautiful homes. Is a good location for a canning factory, brick yard or lime kiln.

FOREST COUNTY.

Forest county is located in the northeastern part of the state on the Michigan boundary line. The area is 1,424 square miles. The population in 1905 was 5,968, a gain of 4,529 over 1900. About one-fifth of the population is of foreign birth, of which number, Germans are the most numerous. Very little as yet has been done in this county with agriculture. It offers many thousand acres to the settler at very reasonable prices. While it is one of the largest counties in the state, yet the total area devoted to farming in 1905 was but 18,369 acres, or less than 3% of the total area of the county. Only 3,594 acres are improved land. The value of these farms, including improvements, was \$350,975, as against \$42,790 in 1890. The surface of the county is rough and rolling in some parts, but not enough to interfere with tillage. It has as a rule been modified by erosion and deposition of the glacial period. The soil is very largely a clayey loam, stony in places, except in the northwestern part where it changes to a sandy loam. Throughout the county there are numerous areas of swampy land, composed mainly of muck and peat. Where farms have been cleared in this county the soil has shown itself capable of producing good grain and grasses as well as corn. Oats and hay are at present the leading crops. A large part of this county could, with profit, be devoted to sheep raising. The price of unimproved land averages about \$8 per acre. For improved farm land, the prices range from \$40 to \$60 per acre. Crandon is the county seat and most important city. The population of the various cities, villages and towns in the county for 1905 is shown by the following table:

FOREST COUNTY.

TOWNS, CITIES AND VILLAGES.	Families.	AGGREGATE POPULATION.			COLOR.			Ex-soldiers and sailors.	Militia.
		Male.	Female.	Total.	White.	Colored.	Indians.		
Caswell	51	316	88	444	404	.....	.....	2	221
Crandon	461	1,071	935	2,006	1,801	.....	*200	7	443
Hiles	59	314	121	435	435	.....	.....	1	212
Laona	150	681	327	1,008	985	.....	23	2	333
North Crandon	122	259	180	439	439	.....	.....	1	57
Wabeno	254	1,152	524	1,676	1,600	5	71	4	672
Total	1,097	3,793	2,175	5,968	5,664	5	299	17	1,933

*4 Indians not taxed.

CRANDON.

Crandon, Forest Co. Population, 1,600. The county seat of Forest county is situated on the C. & N. W. Ry., and on Lake Matonga, 151 miles from Ashland, 88 miles from Wausau, and 252 miles from Milwaukee. American Express. Telegraph and telephone. Shipping facilities and passenger service fair.

Has a bank, 2 drug stores, 5 grocery stores, 2 hardware stores, 1 department store and 2 dry goods stores, 1 jewelry store, 3 fair-sized hotels, 2 boarding houses, high school employing 10 teachers, good churches, 2 resident physicians, 4 lawyers, clothing store, shoe store, meat markets, blacksmith shops, etc. A weekly newspaper is published. There is 1 factory manufacturing hardwood specialties, a saw and planing mill, hub factory and heading mill. This is a fine location for woodwork establishment.

Steam power is used. Wood is used for fuel, being very plentiful in the adjoining country. Plenty of help can be secured in this vicinity to work in factories. Timber and clay can be supplied in large quantities.

The adjacent country is covered with a dense hardwood forest and only a small amount is improved. The land is suitable for farming after the timber is removed. A small per cent of the land is rough, about 20 per cent stony, 20 per cent swamp and the remainder level and free from stone.



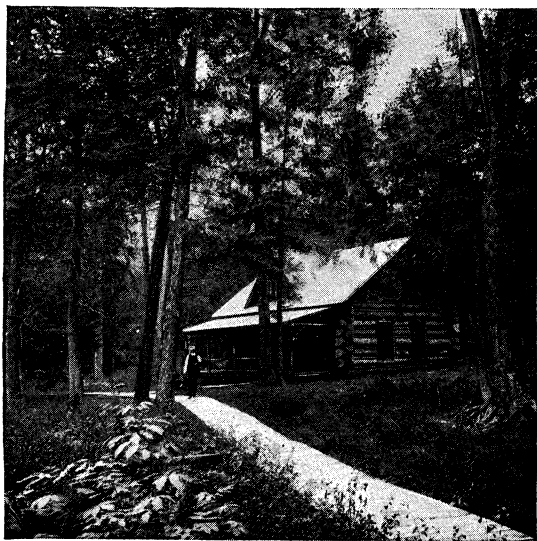
A TYPICAL PIECE OF HARDWOOD TIMBER IN FOREST COUNTY, WIS.

LAONA.

Laona, Forest Co. Population, 500. A village in Laona township, on C. & N. W. Ry., 14 miles from Crandon, the county seat and banking point, 107 miles from Green Bay, 155 miles from Oshkosh and 235 miles from Milwaukee. American Express. Telegraph and telephone. Shipping facilities good.

There is no water power here but there are 3 general merchandise stores, 2 hotels, graded school employing 4 teachers, 2 churches, 2 physicians, 2 barber shops and a saw mill.

This is simply a lumbering town and very little attention is paid to anything else. The adjoining country is suitable for agricultural purposes, but only a very small portion is improved. The land is covered with immense forests of hardwood timber.



A NEW HOME.

NORTH CRANDON.

North Crandon, Forest Co. Population, 300. An unincorporated village on the M. St. P. & S. Ste. M. Ry., in Crandon township, 7½ miles north of Crandon, the county seat and nearest banking point, 27 miles east of Rhineland, and 200 miles from Milwaukee. Western Express. Telegraph and telephone. Good shipping facilities east or west.

Has 4 general stores, 2 hotels, 2 boarding houses, graded schools employing 4 teachers, a weekly newspaper, blacksmith shop, an excelsior factory and several saw mills.

A small water power could be utilized. Wood is used for fuel obtained from the surrounding country at reasonable prices. A canning factory could be supplied with vegetables.



LOGGING IN NORTHERN WISCONSIN.

Clay, sand, timber and stone are the natural products. A limited amount of help can be secured in the vicinity. This would be a good location for a grist mill or pulp mill.

The surrounding country is suitable for agriculture and only about 10 per cent is improved. The soil is a clay loam and about 50 per cent is level and free from stone.

WABENO.

Wabeno, Forest Co. Population, 600. An unincorporated village in Wabeno township, on the C. & N. W. Ry., 25 miles southeast of Crandon, the county seat, 97 miles from Green Bay and 225 miles from Milwaukee. American Express. Telegraph and telephone. Shipping facilities and passenger service fair.

This is principally a lumbering town. Has small water power, 1 drug store, 5 general merchandise stores, 1 hardware and furniture store, 3 hotels, 3 boarding houses, good schools, 3 churches, 2 physicians, 1 lawyer, a weekly newspaper, 2 meat markets, 2 restaurants and several saw mills.

Wood is used for fuel, obtained from the adjoining country. Sand, timber, stone, vegetables and wild berries are the raw materials. Plenty of help can be secured in the village and country. There is a good opening here for a veneer or excelsior factory.

The country will be good for farming when the timber is removed. Only about 1,000 acres are improved at present. About 50 per cent of the land is level and free from stone.

GRANT COUNTY.

Grant county is located in the southwestern part of the state on the Mississippi river.

The area is 1,157 square miles. The population in 1905 was 39,629, a gain of 748 over the census of 1900. Of the total population only 4,491 are of foreign birth, of which number nearly one-half are Germans. It is one of the richest agricultural counties in the state. The farm area in 1905 was 672,591 acres, of which 391,800 acres were improved. In 1890 the total farm area was 656,426 acres. The value in 1905 of these farms, including improvements, was \$23,110,588 as compared with \$15,491,246 in 1890. The Wisconsin, Grant and Platte rivers with their tributaries, have trenched the land in such a manner as to make some portions of the county very rough and hilly. The bluffs along the

Mississippi and Wisconsin rivers are steep, and the roads traversing these parts of the county have very sharp grades. The soil along the rivers is mainly a sandy loam. The remainder of the county is covered with light varieties of clayey loam with some large irregular tracts of prairie loams. There is no humous soil in the county and therefore no lakes. The chief crops and the acreage of each in 1890 and 1905 were as follows:

	Acreage in 1890.	Acreage in 1905.
Corn	86,939	90,086
Oats	87,924	70,535
Barley	1,563	7,737
Rye	7,324	4,295
Hay	75,186	82,812

In 1905 there were 29 cheese factories and 36 creameries in the county. It is one of the foremost wool-producing counties in the state. It is located in the lead and zinc belt of the state, and mining is one of the chief industries of the county. There is a very wide range in prices of land owing to the uneven surface and diversified soil. For unimproved land which can be made tillable, prices range from \$8 to \$35 per acre. For improved farm lands, the price averages over \$100 per acre with some sales recorded at as high as \$200 per acre. The county seat is Lancaster. The population of the cities, villages and towns for 1905 will be found on page 560.

BLOOMINGTON

Bloomington, Grant Co. Population 608. An incorporated village on the Little Grant river, in Bloomington township, 14 miles northwest of Lancaster, the county seat, 12 miles from Bridgeport, on the C. M. & St P. Ry., and 10 miles from Glen Haven, on the C., B. & Q. Ry., the usual shipping points. Telephone connections.

Has a bank, drug store, grocery store, 2 hardware stores, 5 general merchandise stores, jewelry and furniture stores, 2 millinery shops, a shoe store, music store, clothing store, graded public schools employing 7 teachers, Baptist, Catholic, Congregational and Methodist churches, 1 hotel, 4 boarding houses, 2 restaurants, 2 meat markets, 2 blacksmith shops, harness shop and a creamery. Has a weekly newspaper, 4 resident physicians and a lawyer. Stage daily to Lancaster, Glen Haven and Bridgeport.

GRANT COUNTY.

TOWNS, CITIES AND VILLAGES.	Families.	AGGREGATE POPULATION.			COLOR.			Ex-soldiers and sailors.	Militia.
		Male.	Female.	Total.	White.	Colored.	Indians.		
Beetown	254	577	494	1,071	1,060	11	.....	19	221
Bloomington	131	329	296	625	623	2	.....	4	150
Bloomington, village ..	179	296	312	608	608	.....	.....	18	120
Boscobel	31	74	66	140	140	.....	.....	5	17
Boscobel, city	428	754	880	1,634	1,632	2	.....	57	280
Cassville	110	343	308	651	640	6	.....	5	111
Cassville, village	247	430	483	913	913	.....	.....	21	170
Castle Rock	131	357	354	711	711	.....	.....	3	147
Clifton	236	541	514	1,055	1,052	3	.....	10	208
Ellenboro	157	373	355	728	728	.....	.....	7	145
Fennimore	163	401	372	773	773	.....	.....	16	148
Fennimore, village	270	489	564	1,053	1,053	.....	.....	22	172
Glen Haven	180	417	380	797	797	.....	.....	8	175
Harrison	191	532	442	974	974	.....	.....	18	174
Hazel Green	164	462	760	1,222	1,222	.....	.....	3	177
Hazel Green, village..	137	289	240	529	529	.....	.....	10	123
Hickory Grove	133	363	333	696	695	1	.....	3	140
Jamestown	196	483	483	966	966	.....	.....	3	162
Lancaster, city	610	1,172	1,383	2,555	2,542	13	.....	63	408
Liberty	182	431	407	838	838	.....	.....	10	124
Lima	209	504	446	950	950	.....	.....	15	191
Little Grant	113	306	243	549	548	1	.....	7	114
Marion	114	301	279	580	550	.....	.....	3	108
Millville	60	152	139	291	291	.....	.....	9	54
Mt. Hope	155	346	310	656	656	.....	.....	11	131
Mt. Ida	154	382	355	737	737	.....	.....	12	137
Muscoda	83	234	214	448	448	.....	.....	2	89
Muscoda, village	193	353	332	735	735	.....	.....	14	107
North Lancaster	119	285	289	574	561	13	.....	2	177
Paris	147	413	355	768	768	.....	.....	14	161
Patch Grove	127	292	282	535	535	.....	.....	5	123
Platteville	167	454	408	862	862	.....	.....	12	166
Platteville, city:									
ward 1.....	397	622	673	1,295	1,295	.....	.....	.....	.....
ward 2.....	262	559	675	1,234	1,234	.....	.....	.....	.....
ward 3.....	231	448	569	1,017	1,016	1	.....	.....	.....
ward 4.....	192	420	472	892	892	.....	.....	.....	.....
Total, city..4,438								84	950
Potosi	307	728	713	1,441	1,441	.....	.....	7	257
Potosi, village	109	224	226	450	450	.....	.....	10	83
Smelser	202	483	448	931	931	.....	.....	6	173
Cuba City, village.....	185	378	377	755	755	.....	.....	12	151
South Lancaster	169	535	444	979	970	9	.....	14	181
Waterloo	178	444	405	849	849	.....	.....	11	167
Watterstown	154	331	323	654	654	.....	.....	7	132
Wingville	163	420	398	818	818	.....	.....	5	173
Montfort, village	147	311	288	599	597	2	.....	3	124
Woodman	90	239	203	442	442	.....	.....	5	90
Wyalusing	241	532	467	999	999	.....	.....	28	174
Total	7,809	19,820	19,819	39,629	39,560	64	5	593	7,496

Coal and wood are used for fuel. Wood is obtained from the surrounding country and coal from the east. A canning factory can be supplied with fruit and vegetables. A limited amount of help can be secured in the vicinity. The village can be supplied with clay, sand, timber and stone. A large two-story stone

building formerly occupied as a flour and feed mill, is now empty. No cause for idleness given.

The village is located in a good farming country and the land is nearly all improved. Only about 10 per cent of the land is rough. The soil is fertile and free from stone.

BLUE RIVER.

Blue River, Grant Co. Population, 300. A small village on the C. M. & St. P. Ry., 35 miles from Prairie du Chien, 63 miles from Madison, 145 miles from Milwaukee and 230 miles from Chicago. United States Express. Telegraph and telephone. Good shipping facilities and passenger service.

Has a bank and 3 general merchandise stores, graded school, 2 hotels, a physician, blacksmith shop, meat market, barber shop, lumber yard, etc.

Wood is used for fuel, obtained from the adjoining country. A canning factory can be supplied with fruit, vegetables and fish. Help can be secured in the vicinity.

The adjacent country is good for farming and about two-thirds of the land, suitable for crop raising, is improved. The soil produces good crops.

BOSCOBEL.

Boscobel, Grant Co. Population, 1,634. An incorporated city on the Wisconsin river and on the C. M. & St. P. Ry., 20 miles north of Lancaster, the county seat, 70 miles from Madison, 152 miles from Milwaukee and 237 miles from Chicago. United States Express. Telegraph and telephone. Freight facilities and passenger service good.

The city is located one mile south of the Wisconsin river, has good streets, plenty of shade trees, cement walks, 3 public parks, good business buildings and beautiful residences. Has electric light plant, 2 banks, 2 drug stores, 9 grocery stores, 2 hardware stores, 4 dry goods stores, 2 furniture stores, 4 hotels, 3 boarding houses, 5 physicians, 4 lawyers, an excellent high and graded school system employing 13 teachers, 6 churches representing the leading religious denominations. In manufacturing lines there are 2 wagon shops, a cigar factory, glove factory, flour mill, brewery, rustic chair factory and cheese factory. A weekly newspaper is published. Good location for woodenware factory.

A large amount of help can be secured in the city and surrounding country. A canning factory could be supplied with fruit and vegetables. Clay, sand, stone, timber and zinc are the natural products. There are no idle factories or workshops in the city and no failures in that line have ever occurred here.

The surrounding country is good for farming and about 2/3 of the land, suitable for crop raising is improved. The soil is a sandy loam, about one-third rough and a small per cent swampy.

CASSVILLE.

Cassville, Grant Co. Population, 913. An incorporated village on the Mississippi river and on the C. B. & Q. Ry., 17 miles southwest of Lancaster, 28 miles from Dubuque, 85 miles from La Crosse and 213 miles from Chicago. Adams Express. Telegraph and telephone. Good shipping facilities and passenger service.

Has electric light plant, a bank, drug store, 4 grocery, 2 hardware, and 4 dry goods stores, 2 furniture stores, 2 millinery stores, 3 hotels, 2 boarding houses, 3 physicians, 1 lawyer, 4 churches, good high school employing 8 teachers, 2 blacksmith shops, 3 cigar shops, a canning factory, brewery, 2 meat markets, a planing mill, 2 harness shops, brick yard, 2 stone quarries and a livery and feed stable. Two weekly newspapers are published.

There is one canning factory here now doing a profitable business. The village can be supplied with clay, sand stone, timber, iron, zinc and lead. Any amount of help can be secured in the village and vicinity. A sash and door factory, a wagon factory or foundry would be acceptable to the village.

In the adjacent country all the land, suitable for crop raising, is improved.

FENNIMORE.

Fennimore, Grant Co. Population, 1,053. An incorporated village located on the C. & N. W. Ry. in Fennimore township, 76 miles from Madison, 158 miles from Milwaukee and 243 miles from Chicago. American Express. Telegraph and telephone. Shipping facilities and passenger service fair.

Has electric light plant, 2 banks, 2 drug stores, 1 grocery store, 3 hardware stores, 3 general merchandise stores, 2 hotels, 3 physicians, 1 lawyer, high and graded schools employing 10 teachers, has 6 churches, 2 creameries, flouring mill, meat markets, blacksmith shops and a weekly newspaper:

Plenty of help can be secured in the vicinity to work the entire year. A canning factory could be supplied with fruit and vegetables and perhaps other raw material. A good location for a canning factory or tobacco warehouse. The natural products of adjacent country are clay, sand, timber and lead ore.

The village is located in a fine farming country and a large per

cent of the land, suitable for crop raising, is improved. The elevation of the village brings to view some very fine scenery. A narrow gauge railway connects Fennimore and Woodman, a village on the Prairie du Chien division of the C. M. & St. P. Ry.

GLEN HAVEN

Glen Haven, Grant Co. Population, 797. An unincorporated village on the Mississippi river and on the C., B. & Q. Ry., 17 miles from Prairie du Chien, 37 miles from Dubuque, and 222 miles from Chicago. Adams Express. Telegraph and telephone. Good shipping facilities and passenger service.

Has a bank, 2 groceries, 1 hardware and 2 dry goods stores, 2 hotels, 2 boarding houses, graded school employing 2 teachers, 1 physician, meat market, blacksmith shop, lumber yard, harness shop and a wagon shop.

Wood is used for fuel, cut from the timbers along the river. A canning factory can be supplied with fruit, vegetables and fish. Clay, stone, timber and lead are the natural products. A limited amount of help can be secured in the vicinity.

The adjacent country is good for farming and about 50 per cent of the land suitable for crop raising is improved. About 75 per cent of the land is level and free from stone.

LANCASTER

Lancaster, Grant Co. Population, 2,555. An incorporated city located near the center of Grant county, of which it is the county seat, and on the C. & N. W. Ry., 86 miles from Madison, 168 miles from Milwaukee and 253 miles from Chicago. American Express. Telegraph and telephone. Good shipping facilities and passenger service.

Has an abundant supply of the purest water, is lighted by electricity, is connected with four different telephone systems, has 2 banks, 2 drug stores, a number of grocery stores, 4 hardware stores, 1 department store, 7 dry goods stores, 2 laundries, 4 hotels, an excellent high and graded school system employing 14 teachers, churches of the leading religious denominations, 7 physicians, 6 dentists, 11 lawyers. Besides the usual number of shops, etc., there is a sash and door factory, planing mill, 2 flour and feed mills, 2 cigar factories and 2 mining exchanges. Two weekly newspapers are published.

A site would be furnished free to either a beet sugar, canning or overall factory. Steam power is used and wood and coal are used for fuel. Wood can be obtained on the local market. A canning factory can be supplied with such raw materials as fruit

and vegetables, and plenty of help can be secured here. Clay, sand, stone, zinc and lead are the natural products.

About 75 per cent of the land surrounding the city, suitable for crop raising, is improved. The city is located in the best farming section in the county and does a large amount of business.

LIVINGSTON.

Livingston, Grant Co. Population, 300. An unincorporated village on the C. & N. W. Ry., 15 miles northeast of Lancaster, 41 miles from Galena, Ill., 69 miles from Madison, 151 miles from Milwaukee and 236 from Chicago. American Express. Telegraph and telephone. Good shipping facilities. Passenger service fair.

Has a bank, drug store, 2 hardware stores, 3 general merchandise stores, 1 hotel, 2 boarding houses, graded public school employing 3 teachers, churches, 2 physicians, 2 blacksmith shops, meat market and barber shops. There are several lead and zinc mines in the vicinity and the village can be supplied with sand, stone, zinc and lead. The surrounding country is the very best farming land and is all improved.

MONTFORT.

Montfort, Grant Co. Population, 599. An incorporated village on the C. & N. W. Ry., in Wingville township, 22 miles northeast of Lancaster, the county seat, 63 miles from Madison, 145 miles from Milwaukee and 239 miles from Chicago. American Express. Telegraph and telephone. Shipping facilities and passenger service fair.

Has 2 banks, 1 drug store, 2 groceries, 2 hardware stores, 4 general merchandise stores, 2 hotels, 2 churches, a graded public school employing 7 teachers, 2 physicians, 1 lawyer, a weekly newspaper, 4 blacksmith shops, grain elevator, 2 coal dealers, 3 mining exchanges, 1 restaurant, 1 millinery store, 2 furniture stores, 2 meat markets, a jewelry and stationery store, creamery and lumber yards. A weekly newspaper is published. The village is in need of a first-class hotel.

There is no water power. Coal and wood are used for fuel. Wood is obtained from the adjacent country and coal from Galena, Ill. A canning factory could be supplied with fruit, vegetables and corn. Sand, stone, timber, zinc, lead and clay are the natural products. This is a good location for a brick yard. There is plenty of help to be had in the village and adjacent country.

The surrounding country is good for farming and all the land

suitable for crop raising is improved. The land north of the village is rough, but the remainder is level and free from stone.

MUSCODA.

Muscoda, Grant Co. Population, 735. An incorporated village located on the Wisconsin river and on the C., M. & St. P. Ry., 41 miles northeast of Lancaster, 56 miles from Madison, 138 miles from Milwaukee and 228 miles from Chicago. United States Express. Telegraph and telephone. Passenger service and shipping facilities good.

Muscoda is a very pretty little village, has wide macadamized streets, cement walks, nice shade trees, good school buildings, substantial business buildings and residences. The main part of the town is about one mile from the Wisconsin river, which, with its many islands covered with beautiful foliage, and a line of wooded hills south of the village, affords some fine natural scenery. The village would make an ideal summer resort.

Has electric light plant, a bank, 2 furniture stores, drug store, grocery store, 2 hardware stores, 3 general merchandise stores, 2 hotels, a boarding house, graded public schools employing 7 teachers, a Catholic parochial school, 3 churches of the leading religious denominations, 2 physicians, 1 lawyer, and a weekly newspaper. There is an insulator pin and bracket factory, furniture factory, brewery, a brick yard 3 miles from the village and a number of cheese factories here and in the adjacent country.

Steam power is used here. Wood is used for fuel as there is plenty of timber in the adjacent country. This would be a good location for a canning factory using fruit and vegetables. The village can be supplied with clay, sand, timber and stone. Factories employing labor would have no trouble in securing plenty of help in the village and vicinity. The population is made up of Germans and Bohemians, furnishing a class of laborers steady and reliable. This is a good location for a tobacco warehouse.

The surrounding country is good for farming and is nearly all improved. The soil is a sandy loam and produces abundant crops.

PATCH GROVE.

Patch Grove, Grant Co. Population, 350. A small inland village in Patch Grove township, 7 miles from Bridgeport on the C., M. & St. P. Ry., the nearest shipping point. Has telephone connections, stage daily to Bridgeport, Lancaster and Bloomington.

The village is supplied with a bank, drug store, grocery and hardware store, 2 general merchandise stores, a hotel, good

graded school employing 3 teachers, Catholic and Methodist churches, a physician, a lawyer, harness shop, wagon shop, creamery, blacksmith shop, meat market, etc.

New manufacturing industries locating here would be furnished site for building, and have no trouble in securing plenty of help. Steam power would have to be used. Wood is used for fuel and is obtained in the vicinity. The village would welcome a canning factory and the adjacent country would furnish a supply of fruit and vegetables. There is plenty of clay, sand, timber and stone in the country. There are some good business openings in this village that will bear investigation. A new hotel is needed.

The surrounding country is a first class agricultural section and all of the land is improved. All of the land near the village is level and free from stone.

PLATTEVILLE.

Platteville, Grant Co. Population, 4,438. An incorporated city, located in the southeastern part of the county, on the C. & N. W. and C. M. & St. P. Rys., 22 miles from Galena, Ill., 88 miles from Madison, 170 miles from Milwaukee and 255 miles from Chicago. American and United States Express. Telegraph and telephone. Good facilities for the receipt and shipment of freight. Four passenger trains daily on the C. & N. W., and six on the C. M. & St. P. Ry.

Is lighted by electricity, has 2 banks, 3 drug stores, 15 grocery stores, 4 hardware stores, 3 dry goods stores, 1 laundry, 3 clothing and 2 shoe stores, 1 general store, 4 hotels with total capacity for 100 guests, 7 physicians, 8 lawyers, the very best educational advantages, 20 teachers employed in the city schools, has a state normal school and 2 German Lutheran parochial schools, 11 churches representing all the leading denominations. Has a foundry and machine shop, a large creamery, feed mill, carriage, plow and wagon factories, 4 cigar factories and a brewery. Three weekly newspapers are published. Lead and zinc mining are the principal industries.

Steam power is used here. Coal is used for fuel, shipped in from Illinois. The city can be supplied with clay, sand, stone, zinc, lead and iron sulphur for sulphuric acid. There is a splendid opening here for a sulphuric acid plant. There might be some difficulty encountered in securing help in the city. There have been a few failures of manufacturing industries in the city caused by conditions for which the city or location was not responsible.

The surrounding country is good for farming and about two-thirds of the land is level and free from stone. The city is in the

center of the lead and zinc mining country and is in a very prosperous condition. This is a good location for a zinc smelter, brick yard and tiling and concrete factory. More hotels are needed; also a zinc ore dealer.

POTOSI.

Potosi, Grant Co. Population, 450. An incorporated village on the Mississippi river and on the C., B. & Q. Ry., 14 miles from Dubuque, 40 miles from Prairie du Chien, 99 miles from La Crosse and 199 miles from Chicago. Adams Express. Telegraph and telephone. First class shipping facilities and passenger service.

Has a bank, drug store, grocery store, hardware store, 2 general merchandise stores, 2 hotels, a physician, high and graded school employing 6 teachers, Congregational and Catholic churches, furniture store, 2 millinery stores, a harness shop, 2 blacksmith shops, a brewery, a restaurant, and a livery stable.

A canning factory could be supplied with fruit, vegetables and fish. Steam power would have to be used for manufacturing. Wood is used for fuel and is obtained from the vicinity. No help can be secured here.

The adjacent country is good for farming and nearly all the land is improved. Heavy clay soil, rough along the river, some swampy along the river. The village is a mining town and a large mine is in operation in the village.

PRESTON.

Preston, Grant Co. Population, 60. A station on the C. & N. W. Ry, 14 miles northeast of Lancaster, the county seat, and 4 miles from Montfort, the nearest banking point, 72 miles from Madison, 154 from Milwaukee and 239 miles from Chicago. American Express. Telegraph and telephone. Shipping facilities and passenger service good.

Has one general store. The surrounding country is a fine farming section and abundant crops are produced. Wood for fuel is obtained from the farmers near by. Fruit and vegetables can be supplied for canning and there is plenty of clay, sand, stone, timber and lead in the vicinity.

GREEN COUNTY.

Green county is located in the south central part of the state on the Illinois-Wisconsin boundary line. It has an area of 576 square miles. The population in 1905 was 22,390. Nearly one-fifth of the population is of foreign birth, Swiss constituting the larger number, with Germans second in num-

ber. The farm acreage in 1905 was 339,714 acres, which is all the tillable land in the county. Of this amount 271,721 acres were improved land. The value of the farms in 1905 including improvements was \$20,138,624, as compared with \$13,156,860, in 1890, a gain of \$6,981,764 or 53 per cent in 15 years. The surface of the county in the western part is rough and hilly, while that of the eastern section is more of the rolling, regular type. In the eastern and northwestern part of the county the soil is a sandy loam. The central and southern part is a prairie soil. The western and remaining portions of the county are a light variety of clayey loam. An excellent drainage system is accorded by a net-work of small streams. There is very little humus soil, the only traces of it being found in a few places near the eastern and northern boundaries. Green county is one of the richest agricultural counties in the state. The principal crops of the county and the acreage devoted to each in 1890 and 1905 were as follows:

	Acreage in 1890.	Acreage in 1905.
Oats	44,832	37,995
Barley	1,180	7,283
Rye	4,011	3,023
Corn	52,399	56,120
Hay	56,516	78,000

Green county is the premier dairy county in the state and one of the foremost in the United States. There are 201 cheese factories and 4 creameries located within its boundaries. There is also some lead and zinc mining in the western part of the county. The range of prices for improved farm property is from \$40 to \$120 per acre. Monroe is the county seat. The following table shows the population statistics of the different cities, villages and towns in the county for 1905:

GREEN COUNTY.

TOWNS, CITIES AND VILLAGES.	Families.	AGGREGATE POPULATION.			COLOR.			Ex-soldiers and sailors.	Militia.
		Male.	Female.	Tot...	White.	Colored.	Indians.		
Adams	153	466	344	810	810	.....	.....	2	181
Albany	142	348	314	662	662	.....	.....	18	156
Albany, village	219	396	426	822	817	5	.....	18	112
Brooklyn	196	460	410	870	870	.....	.....	6	181
Brooklyn, village	84	153	133	286	256	.....	.....	5	56
Brookhead, city*	491	783	884	1,667	1,663	4	.....	40	239
Cadiz	262	597	527	1,124	1,124	.....	.....	22	224
Browntown, village	83	151	126	277	277	.....	.....	5	43
Clarno	270	643	546	1,189	1,189	.....	.....	.....	196
Decatur	140	332	264	596	595	1	.....	4	156
Exeter	184	420	385	805	805	.....	.....	7	165
Jefferson	288	634	554	1,188	1,187	1	.....	9	237
Jordan	177	512	379	891	891	.....	.....	4	117
Monroe	162	518	404	922	921	1	.....	5	171
Monroe, city*	1,118	1,962	2,307	4,269	4,269	.....	.....	82	740
Mount Pleasant	146	394	317	711	711	.....	.....	4	122
Monticello, village	161	315	294	609	609	.....	.....	6	9
New Glarus	123	408	277	685	685	.....	.....	1	170
New Glarus, village	185	348	307	655	655	.....	.....	9	140
Spring Grove	219	488	441	929	929	.....	.....	9	211
Sylvester	172	436	350	786	783	.....	.....	6	142
Washington	142	418	312	730	730	.....	.....	3	190
York	169	493	414	907	907	.....	.....	8	163
Total	5,286	11,675	10,715	22,390	22,378	12	.....	255	4,212

*Wards not given.

ALBANY.

Albany, Green Co., is an incorporated village of 822 inhabitants, located on the C., M. & St. P. Ry., 150 miles from Chicago, 25 miles from Janesville and 99 miles from Milwaukee. United States Express. Telegraph and telephone. Has good freight facilities. four passenger trains daily.

Coal for fuel is shipped from Illinois. An abundance of fruit, vegetables, sand, stone and clay can be supplied. A canning factory is the most desirable industry for this place. The village is supplied with an electric light plant, 2 banks, 2 drug stores, 5 groceries, 1 hardware, 3 dry goods stores, 2 restaurants, 2 millinery stores, 2 cigar factories, 2 machine shops, 1 linen mill, 1 hotel, a high school and five physicians. It has no lawyer. A first class hotel would do a good business here. The village has a fine park and can be made a summer resort, having a beautiful lake and stream of water near by.

Nearly all the land surrounding the village is improved, and mostly level and just sandy enough to keep the soil loose. The principal occupations of the farmers are dairying, stock raising and tobacco growing.

BRODHEAD.

Brodhead, Green Co., is a city of 1,667 population, located on the C., M. & St. P. Ry., 143 miles from Chicago, 18 miles from Janesville and 82 miles from Milwaukee. United States Express. Telegraph and telephone. Has four passenger trains daily. Good facilities for receipt and shipment of freight.

The city is supplied with electric light, 2 banks, 2 drug stores, 3 groceries, 2 hardware stores, 6 dry goods stores, a laundry, 3 hotels, 2 newspapers, a creamery, a machine shop, 8 physicians, 2 lawyers, a high school employing 12 teachers, cement walks, shady, well kept streets, a library, park, and small lake, 3 miles from the city. Such raw materials as sand, stone, clay, fruit and vegetables can be procured in the vicinity and some inducements would be offered for an establishment that can utilize the materials. Tobacco is also grown here. A canning or other light manufacturing establishment is best suited for the place.

The soil is of the best and about 90 per cent of the land of the surrounding country is improved. Dairying and stock raising are the leading occupations of the farmers. There is some sandy land in the vicinity.

BROOKLYN.

Brooklyn, Green Co., is an incorporated village of 286 people, located on the C. & N. W. Ry., 123 miles from Chicago, 15 miles from Madison, and 20 miles from Janesville. American Express. Has six passenger trains daily. Excellent facilities for receipt and shipment of freight.

The village has a bank, 1 drug store, 3 groceries, 1 hardware, 1 general store, a chair factory, 1 creamery, a tobacco warehouse, 1 elevator, 1 hotel, 1 physician and a graded school. To make the chair factory a success more capital is needed.

Wood secured from the surrounding country and coal from Illinois are the fuels used. Vegetables and tobacco are about the only raw materials that can be supplied.

Nearly all the surrounding country is excellent for farming purposes, mostly improved, slightly rolling, little stony or marshy and very fertile. Tobacco growing and stock raising are the chief occupations.

BROWNTOWN.

Browntown, Green Co., is an incorporated village having a population of 277, located on the C., M. & St. P. Ry., 167 miles from Chicago, 42 miles from Janesville, and 106 miles from Milwaukee. United States Express. Telegraph and telephone. Has four passenger trains daily. Good facilities for receipt and shipment of freight. Illinois Central Ry., one-half mile from village.

The village is supplied with 1 bank, 1 drug store, 3 groceries, 1 hardware, 2 dry goods stores, a bakery and restaurant, a cream-

ery, grist mill, 2 hotels, a graded school and 1 physician. Coal is shipped from Illinois. Such raw materials as vegetables, clay, sand and peat can be obtained from near the village. Any small manufacturing concern employing from thirty to forty people is best adapted to this place.

The surrounding country is an excellent farming district, nearly all being improved. The soil is a clayey loam, level, free from sand, stone and marshes. Dairying is the leading occupation of the farmers.

DAYTON.

Dayton, Green Co., is an unincorporated village of about 300 people, located on the Sugar river, about two and one-half miles from the Illinois Central Ry.

The village is supplied with 1 grocery, 2 dry goods stores, 1 hotel and a graded school. Clay, lead and vegetables are raw materials that can be supplied, and a limited amount of help procured.

The soil of the farms surrounding the village is fertile and nearly all improved.

MARTINTOWN.

Martintown, Green Co., is an unincorporated village of about 200 population on the Illinois Central Ry., 20 miles from Freeport, 70 miles from Galena, 88 miles from Dubuque and 134 miles from Chicago. Has 2 passenger trains daily. American Express. Facilities for receipt and shipment of freight good.

Such raw material as vegetables, sand, clay and stone can be supplied. About 5 acres of land near the depot can be had for manufacturing purposes. About 50 laborers, 25 men and 25 young persons, can be secured. The village has some undeveloped water power. It is supplied with one grocery store, a creamery, a blacksmith shop, a grist mill, a saw mill and a lime kiln.

About one-half the land of the surrounding country is hilly and about one-half improved. Near the bluffs the land is stony, but little sandy and no swamps. The improved land is very fertile and all is suitable for general farming or stock raising.

MONROE.

Monroe, Green Co., is a city having 4,200 inhabitants. Is located on the C., M. & St. P. Ry. and the Illinois Central Ry., 33 miles from Janesville, 139 miles from Chicago, 97 miles from Milwaukee and 25 miles from Freeport. Has 8 passenger trains daily. Both United States and American Express. Excellent freight facilities.

The city has a gas plant, an electric light plant, 3 banks, 3 drug stores, 7 groceries, 4 hardware, 4 dry goods stores, 2 laundries, a condensed milk factory, 2 carriage factories, a brewery, 3 newspaper establishments, a planing mill, a glove factory, an excellent public school system, 10 physicians, 9 lawyers, a public park, excellent streets, well supplied with shade trees, 4 hotels and 2 boarding houses. Cement and tile works are desired.

Such raw materials as fruit and vegetables can be supplied. There are good prospects near the city for zinc ore. About 150 laborers can be procured. Coal shipped from Illinois and wood are used as fuel. This city is a first class location for a cold storage plant. There is a factory building formerly used for a glove factory that can be secured reasonably cheap. The firm which ran the factory closed it up on account of lack of capital.

The land of the surrounding country is excellent for farming purposes, nearly all improved, free from stone, swamps and sand, and nearly level. Stock raising and dairying are the chief occupations of the farmers. Zinc and lead mining is attracting considerable attention.

NEW GLARUS.

New Glarus, Green Co., is an incorporated village of 655 inhabitants, located on the C., M. & St. P. Ry., 142 miles from Chicago, 17 miles from Janesville and 81 miles from Milwaukee. Telegraph and telephone. United States Express. Good freight and passenger facilities.

The village has an electric light plant, 1 bank, 1 drug store, 4 groceries, 2 hardware stores, 1 general store, a brewery, 3 blacksmith shops, 2 furniture stores, a cheese factory, 2 hotels, 1 boarding house, a public school, employing 5 teachers, and 1 physician.

Such raw material as clay, sand, stone, peat, timber, lead, fruit and vegetables can be supplied. A condensed milk factory would be a most suitable enterprise for the place. From fifty to seventy-five persons can be procured to work in a factory.

About three-fourths of the land of the surrounding country

suitable for farming is improved, more or less rolling, but the soil is a rich clayey loam. Dairying is the leading occupation of the farmers.

GREEN LAKE COUNTY.

Green Lake county is located in the east central part of the state, a little southwest of Lake Winnebago. The area is 364 square miles. The population in 1905 was 15,838, a slight gain over the census of 1900. Nearly one-fourth of the population is of foreign birth, of which number Germans are by far the most numerous. The farm area in 1905 was 200,474 acres, or practically all of the tillable land of the county. Of this area 117,639 acres are improved land. The value of these farms, including improvements in 1905, was \$10,609,375 as against \$6,102,720 in 1890. The surface of the county is somewhat broken and contains isolated hills or knobs of rocks which rise above the surrounding country. The surface is largely covered with glacial drift which varies greatly in thickness and composition. Covering the western and northern portions of the county the soil is a light and easily worked sandy loam, which is pre-eminently a potato soil. The eastern and central part of the county is a prairie loam, light and open in texture. The foundation and structure of this soil give it a most excellent drainage which contributes to its exceptional native fertility. The remaining portion of the county is a light variety of clayey loams. Several irregular areas of humus soil, composed mainly of muck and peat, occur in the western part. The chief crops and the acreage devoted to each in 1890 and 1905 were approximately as follows:

	Acreage in 1890.	Acreage in 1905.
Wheat	16,189	3,124
Oats	19,343	32,395
Barley	7,985	10,189
Rye	6,409	6,039
Corn	18,381	22,155
Hay	31,649	29,919

Clover seed and timothy seed are also important crops. There are 8 creameries in the county. The price for good unimproved land averages \$40 per acre. The range of prices for improved

farm land is from \$60 to \$100 per acre. The village of Dartford is the county seat. The population of the cities, villages and towns of the county for 1905 was as follows:

GREEN LAKE COUNTY.

TOWNS, CITIES AND VILLAGES.	Families.	AGGREGATE POPULATION.			COLOR.			Ex-soldiers and sailors.	Militia.
		Male.	Female.	Total.	White.	Colored.	Indians.		
Berlin	163	422	356	778	778	.....	.....	8	149
Berlin, city:									
ward 1.....	190	369	424	793	793	.....	.....	7	135
ward 2.....	250	544	619	1,163	1,162	*1	.....	14	204
ward 3.....	255	502	549	1,051	1,051	.....	.....	22	170
ward 4.....	166	335	377	712	710	2	.....	8	111
ward 5.....	191	416	462	878	878	.....	.....	20	114
Total, city, 4,638									
Brooklyn	198	513	436	949	949	.....	.....	6	210
Dartford, village	140	254	273	527	527	.....	.....	16	97
Green Lake	233	612	567	1,179	1,179	.....	.....	6	192
Kingston	176	367	358	725	725	.....	.....	7	137
Mackford	186	446	405	851	851	.....	.....	2	196
Markesan, village	193	380	407	787	787	.....	.....	9	134
Manchester	215	524	470	994	994	.....	.....	1	181
Marquette	149	387	372	759	759	.....	.....	9	143
Princeton	207	567	549	1,116	1,116	.....	.....	4	164
Princeton, village	341	670	755	1,425	1,425	.....	.....	17	231
Seneca	106	304	261	565	565	.....	.....	1	149
St. Marie	112	344	242	586	586	.....	.....	2	123
Total	3,401	7,956	7,882	15,838	15,835	3	.....	152	2,800

*Includes total in Green Lake and Waushara counties.

†1 Chinaman.

BERLIN.

Berlin, Green Lake Co., is an incorporated city of 4,638 inhabitants, 4,597 of which are in Green Lake county and 41 in Waushara county; is located on the Fox river and the C., M. & St. P. Ry., 97 miles from Milwaukee and 182 miles from Chicago. Has three passenger trains daily. United States Express. Telegraph and telephone. Freight accommodations good.

The village is supplied with a gas plant, a central heating plant, electric light plant, 2 banks, 3 drug stores, 9 grocery stores, 5 hardware stores, 4 dry goods stores, 1 laundry, bottling works, brewery, canning and pickling establishment, 1 daily and 2 weekly newspapers, water works, whip factory, repair shops, 1 broom and wash-board factory, glove and apron factory, wagon shops, flouring mills, butter tub factory, and factories for the manufacture of mail boxes, gloves, mittens, wagons, leather goods, fur coats, shoes, and a tannery, and a granite quarry which produces

some of the best granite in the world. There are 5 hotels, 2 boarding houses, a public library, 2 large public school buildings, 2 public parks, and well kept streets with plenty of shade trees. Seven physicians and 5 lawyers are located here. The city has one idle factory building.

Coal, shipped from Milwaukee, is the principal fuel. All the water power available is developed. Plenty of adult help can be procured and such raw materials as fruit, vegetables, clay, sand, peat, granite, lime, and iron can be supplied. Any industry that can utilize these materials is best suited for the place.

Nearly all the land of the surrounding country is improved, soil very fertile and free from stone.

DARTFORD.

Dartford, Green Lake Co. is an incorporated village of 527 inhabitants. Is the county seat, located one mile from Green Lake station on the C. & N. W. Ry., 175 miles from Chicago, 90 miles from Milwaukee and 27 miles from Fond du Lac. Has four passenger trains daily. Facilities for receipt and shipment of freight fairly good. American Express.

Coal and wood are used for fuel, coal being procured from Milwaukee and wood from a forest 2 miles north of the village. Such raw materials as vegetables, clay, sand, peat and stone can be supplied in abundance. A 30-horse water power can be developed, and about 50 men, 100 women and 100 young persons can be secured to work in factories.

An electric light plant could be maintained here. The village is already supplied with a bank, 1 drug store, 5 groceries, 1 hardware, 2 dry goods stores, 1 printing office, 1 harness and shoe store, 1 jewelry store, 1 meat market, 1 boat factory, which also manufactures gasoline engines and does repairing, 2 blacksmith shops, 1 wall-paper and paint store, a creamery, a flouring mill, a lumber yard, coal dealer, 6 hotels, 2 boarding houses, 3 physicians, 2 lawyers and a public school employing 6 teachers. The village is a very popular summer resort being located on a beautiful lake 10 miles long and from 2 to 4 miles wide. It has well kept streets, with an abundance of shade trees, ponds and creeks scattered here and there throughout the village.

The land of the surrounding country is excellent for farming purposes, about three-fourths being improved. Very little of it is stony, some swampy, some sandy, but all level.

KINGSTON.

Kingston, Green Lake Co., is an unincorporated village of about 250 inhabitants, eight miles from railroad. Markesan, on the C., M. & St. P. Ry., is the nearest station. Is 88 miles from Milwaukee, 173 miles from Chicago. Has two passenger trains daily at Markesan. U. S. Express.

This village has about 100 horse water power that can be developed. Wood is the principal fuel. Such raw materials as vegetables, fruit, clay, sand, timber, and stone can be furnished. About 125 laborers can be procured. The village has one drug store, 4 groceries, 1 hardware, 3 dry goods stores, 2 farm implement establishments, a school employing 2 teachers, 1 hotel and 1 physician.

Most of the land of the surrounding country is suitable for farming, three-fourths of which is improved. The soil is stony in some places, sandy in others, and some swampy land in others.

MARKESAN.

Markesan, Green Lake Co. An incorporated village of 787 inhabitants, located on the C., M. & St. P. Ry., 88 miles from Milwaukee and 173 miles from Chicago. Has two passenger trains daily. Freight facilities fairly good. U. S. Express.

There is no undeveloped water power at this place, yet there is a good supply of water for household purposes. Such raw materials as fruit and vegetables can be supplied. A glove, mitten, or fur coat factory is best suited for the town, and an electric light plant could very profitably be established here. The village is supplied with one bank, 2 drug stores, 2 groceries, 2 hardware stores, 3 dry goods stores, 1 laundry, 2 furniture stores, 2 agricultural implement stores, 2 hotels, 1 boarding house, 4 blacksmith shops, 2 physicians, 2 lawyers, and a public school employing 7 teachers. A weekly newspaper is published. The place is a good location for a department store.

All the land of the surrounding country is level and suitable for farming purposes, and is well improved. The soil is a clayey loam, free from stone and marshes.



FOREST SCENE IN NORTHERN WISCONSIN.

PRINCETON.

Princeton, Green Lake Co., is an incorporated village of 1,425 inhabitants, located on the C. & N. W. Ry., 184 miles from Chicago and 99 miles from Milwaukee. Has four daily passenger trains. Good facilities for receipt and shipment of freight. American Express.

The village has a fine water power, nearly all of which is developed. Coal and wood are used as fuel, the former being shipped from Milwaukee. Not much raw material of any kind can be supplied. The village desires a glove factory, a hose factory and a laundry. It is already supplied with an electric light plant, a telephone system, 2 banks, 2 drug stores, 4 groceries, 4 hardwares, 8 dry goods stores, implement stores, blacksmith and wagon shops, a brewery, foundry and machine shop, 4 hotels, bottling works, flour and feed mill, overall factory, a weekly newspaper, a high school employing 10 teachers, 4 physicians, and 2 lawyers. The village is a well laid-out place, with fine shady streets, cement sidewalks, and public buildings. The river runs through the village and Green Lake and Lake Puckaway are a few miles distant.

The land of the surrounding country is good, and about three-fourths of it is improved. It is rolling and somewhat sandy.

IOWA COUNTY.

Iowa county is located in the south-western part of the state. The area is 763 square miles. The population in 1905 was 22,971. Over one-third of the population is of foreign birth, the chief nationalities represented being Danes, Norwegians and Germans. The county occupies a high rank in agriculture. The total farm area in 1905 was 443,415 acres, of which 280,597 acres are improved. In 1890 the farm area was 431,560 acres, of which 272,777 acres were improved. The value of the farms and buildings in 1905 was \$15,721,647, as compared with \$9,150,378 in 1890, a gain of \$6,571,269. The surface in the northern, eastern and south-western parts is rough and hilly. The remainder of the county consists of ridge land which is gently rolling. The soil in the northern part along the Wisconsin river is a light and open sandy loam. Covering the larger part of the county the soil is a light form of clayey loam, with numerous irregular tracts of very fertile prairie loam, which increase in size in the western part, covering a large portion of the county. There are no swamps or lakes in the county, but a net-work of small streams furnishes an excellent drainage system. The chief crops and the acreage devoted to each in 1890 and 1905 were as follows:

	Acreage in 1890.	Acreage in 1905.
Wheat	5,623	1,786
Corn	42,387	43,603
Oats	61,347	69,581
Barley	656	3,396
Rye	3,246	5,330
Hay	50,971	63,220

The county possesses a very large and wealthy dairy industry, there being 111 cheese factories and 11 creameries in 1905. In the southern part of the county there are numerous lead and zinc mines. While there is very little unimproved land in the county except that in connection with the improved land, the sale price of such land ranges from \$20 to \$35 per acre. The price of improved land ranges from \$40 to \$100 per acre. Dodgeville is the county seat. The fol-

Following table shows the population statistics of the different cities, villages and towns in the county for 1905.

IOWA COUNTY.

TOWNS, CITIES AND VILLAGES.	Families.	AGGREGATE POPULATION.			COLOR.			Ex-soldiers and sailors.	Militia.
		Male.	Female.	Total.	White.	Colored.	Indians.		
Arena	284	716	648	1,364	1,364	.....	13	289
Brigham	292	746	657	1,403	1,403	.....	4	299
Clyde	121	298	266	564	564	.....	7	121
Dodgeville	315	847	711	1,558	1,558	.....	4	321
Dodgeville, city:									
ward 1.....	41	263	272	535	535	.....	.....	.....
ward 2.....	211	336	411	747	746	*1	.....	.....
ward 3.....	318	414	456	870	870	.....	.....	.....
Total, city, 2,152							27	448	
Eden	127	329	274	603	603	.....	4	117
Cobb, village	63	140	129	269	269	.....	2	44
Highland	279	737	719	1,456	1,456	.....	6	261
Highland, village	196	448	471	919	919	.....	4	132
Linden	144	713	575	1,288	1,288	.....	4	259
Linden, village	160	316	267	583	582	†1	4	115	
Mifflin	257	606	563	1,169	1,168	1	2	234	
Rewey, village	80	169	166	325	325	.....	9	53
Mineral Point	261	540	476	1,016	1,016	.....	6	219
Mineral Point, city:									
ward 1.....	203	352	458	810	810	.....	.....	.....
ward 2.....	250	496	527	1,023	1,014	9	.....	.....
ward 3.....	144	292	308	600	591	6	.....	.....
ward 4.....	164	453	366	819	818	*1	.....	.....
Total, city, 3,252							31	767	
Moscow	232	651	550	1,201	1,201	.....	11	211
Pulaski	159	482	417	899	839	.....	.....	176
Avoca, village	105	213	198	411	411	.....	13	74
Ridgeway	143	423	355	778	777	1	5	141	
Ridgeway, village	87	182	176	358	358	.....	6	76
Waldwick	160	354	329	683	683	.....	6	128
Wyoming	130	356	354	710	710	.....	1	110
Total	4,926	11,872	11,669	22,971	22,951	20	169	4,618	

*1 Chinaman.

†1 Japanese.

AVOCA.

Avoca, Iowa Co. Population, 411. An incorporated village on the C. M. & St. P. Ry., in the north-western part of the county, 4½ miles from Prairie du Chien, 50 miles from Madison, 132 miles from Milwaukee and 217 miles from Chicago. United States Express. Telegraph and telephone. Good shipping facilities and passenger service.

The village is supplied with plenty of cheap fuel, has 2 hardware and 3 general merchandise stores, graded school employing 6 teachers, 3 churches, one physician, grist mill, cheese box factory, meat market, blacksmith shops, etc. Muscoda is the nearest banking point.

Steam power is used. Wood and coal are used for fuel. Wood is obtained from adjacent lands. Fruit and vegetables can be furnished for canning. Plenty of clay, sand, timber and stone handy to the village. Help can be secured here.

The surrounding country is good for farming and about 75 per cent of the land suitable for crop raising is improved. About 50 per cent is level and free from stone, a small per cent is swampy and some sandy. Good inducements will be offered for a canning factory.

BARNEVELD.

Barneveld, Iowa Co. Population, 350. An unincorporated village on the C. & N. W. Ry., in Brigham township, 15 miles northeast of Dodgeville, 32 miles from Madison, 114 miles from Milwaukee and 199 miles from Chicago. American Express. Telegraph and telephone. Fair shipping facilities and passenger service.

The village is supplied with a bank, drug store, 2 groceries, 2 hardware and 2 general merchandise stores, 1 hotel, 2 boarding houses, graded school employing 3 teachers, Baptist, Catholic, Congregational, Lutheran and Methodist churches, furniture store, jewelry shop, blacksmith and wagon shop, meat markets, and a feed mill. A weekly newspaper is published. The village needs better hotel accommodations.

A limited amount of help can be secured here. Wood is used for fuel obtained from the adjacent country. This is a fine location for a brick yard and there is plenty of cordwood timber in the vicinity.

This is a good farming section and 50 per cent of the land suitable for crop raising is improved.

COBB.

Cobb, Iowa Co. Population, 269. An incorporated village located on the C. & N. W. Ry., in Eden township, 11 miles west of Dodgeville and 5½ miles from Montfort, the nearest banking point, 58 miles from Madison, 140 miles from Milwaukee and 225 miles from Chicago. American Express. Telegraph and telephone. Shipping facilities and passenger service fair.

The village is supplied with a drug store, 2 hardware stores, 3 general merchandise stores, 2 hotels, 1 boarding house, high school employing 6 teachers, Adventist, Lutheran and Methodist churches, 2 physicians, a creamery, 2 blacksmith and wagon shops, harness shop, furniture store, lumber

yard and tailor shop. The village needs a first-class hotel.

Plenty of wood in the vicinity guarantees cheap fuel. Help can be secured in the village. Fruit and vegetables can be furnished for canning. The natural products are stone, timber, zinc and lead.

About four-fifths of the land surrounding the village, suitable for crop raising, is improved. The country is practically all level and free from stone. Abundant crops of all kinds are produced.

DODGEVILLE.

Dodgeville, Iowa Co. Population, 2,152. An incorporated city located on C. & N. W. Ry., and the Illinois Central Ry., in the center of Iowa county, of which it is the judicial seat. The city is 8 miles northeast of Mineral Point, on the C., M. & St. P. Ry., 47 miles from Madison, 129 miles from Milwaukee and 214 miles from Chicago. American Express. Telephone and telegraph. Good freight facilities and passenger service.

The city was first settled in 1826, incorporated as a city in 1889. It is supplied with water works, electric lights, 3 banks, 2 drug stores, 2 grocery stores, 3 hardware stores, 8 general merchandise stores, 2 clothing stores, excellent public schools employing 20 teachers, Bapstist, Catholic, Congregational, Evangelical, Methodist and Presbyterian churches, 4 physicians, 5 lawyers, 2 hotels, 4 boarding houses, an opera house, flour mill 1 laundry, furniture store, canning factory, wagon and carriage factory, creamery, buttertub factory, blacksmith shops, meat markets, 3 jewelers, 3 milliners, marble shops, etc. Three weekly newspapers are published.

The natural products are clay, sand, stone, timber, zinc and lead. Some help could be secured in the vicinity.

There are a number of zinc and lead mines in the vicinity. Steam power is used for manufacturing and wood and coal are used for fuel.

The city is located in a good farming section and all the land is improved. Grain, live stock, produce and dairy products are shipped.

HOLLENDALE.

Hollendale, Iowa Co. Population, 300. An unincorporated village on the Illinois Central Ry., in Moscow township, 13 miles southeast of Dodgeville, 60 miles from Madison, 142 miles from Milwaukee, 53 miles from Freeport and 227 miles from Chicago. American Express. Telegraph and telephone. Shipping facilities fair. Two passenger trains daily.

The village is supplied with a bank, drug store, 2 hardware stores, 5 general merchandise stores, furniture store, 1 hotel, graded school employing 2 teachers, Catholic and Lutheran churches, a physician, harness shop, blacksmith shop, meat markets, creamery, grist mill, etc. A weekly newspaper is published.

There is a good location here for a pottery. Coal and wood are used for fuel. Wood is obtained from the adjacent country and coal from Freeport or Chicago. A limited amount of help can be secured in the vicinity.

The village is located in a dairying country and the land suitable for crop raising is all improved. Potters clay is the principal natural product.

MIFFLIN.

Mifflin, Iowa Co. Population, 200. A small unincorporated village in the southwestern part of the county, 18 miles from Dodgeville, the county seat, and 3½ miles from Rewey, the nearest railroad station and banking point.

Has telephone connections, 2 general merchandise stores, graded school employing 2 teachers, 2 blacksmith shops, 1 hotel, wagon maker and cheese factory.

There is a small water power here where at one time was a flour mill. Wood is used for fuel, obtained from the adjacent country. Enough fruit and vegetables are produced to supply a canning factory, Stone, sand and zinc ore are the natural products. This is a mining town in the heart of the mining country. The village needs a good hotel to accommodate the miners.

MINERAL POINT.

Mineral Point, Iowa Co. Population, 3,252. An incorporated city located in the southern part of the county on the C., M. & St. P., and M. P. & N. Rys., 8 miles south of Dodgeville, the county seat, 63 miles from Madison, 152 miles from Milwaukee and 206 miles from Chicago. United States Express. Telegraph and telephone. Shipping facilities and passenger service fair.

The city is supplied with an electric light plant, 2 banks, 3 drug stores, 7 groceries, 4 hardware, 4 dry goods and 2 clothing stores, public and denominational schools, Catholic, Episco-

pal and Primitive Methodist churches, 5 hotels, 5 physicians, 7 lawyers, 1 laundry, 3 restaurants, 4 blacksmith shops, a large plant for the manufacture of oxide of zinc and sulphuric acid, a creamery, a brewery and two feed mills. Two weekly newspapers are published.

There is plenty of help to be had in the city and surrounding country. Vegetables of all kinds can be supplied for canning. The natural products are sand, stone, zinc, lead and sulphur. There is a fine opening here for the manufacture of metallic zinc.

The surrounding country is hilly but the land is all improved. The soil contains large deposits of dry bone and black jack, and the shipments comprise live stock, farm produce, beer, zinc and lead.

REWEY.

Rewey, Iowa Co. Population, 335. An incorporated village on the C. & N. W. Ry., in Mifflin township, 22 miles southwest of Dodgeville, 37 miles from Galena, Ill., 73 miles from Madison, 155 miles from Milwaukee and 240 miles from Chicago. American Express. Telegraph and telephone. Shipping facilities and passenger service fair.

Has a bank, drug store, 1 hardware store, 3 general merchandise stores, a high school employing 5 teachers, Methodist, Episcopal and Primitive Methodist churches, one physician, a furniture store, restaurant, cheese factory, blacksmith shop, meat market, lumber yard etc.

Vegetables can be supplied for canning purposes. The natural products are zinc and lead in large quantities.

The surrounding country is good for farming and about 85 per cent of the land suitable for crop raising is improved.

RIDGEWAY.

Ridgeway, Iowa Co. An incorporated village of 358 inhabitants, located on the C. & N. W. Ry., in Ridgeway township, 10 miles northeast of Dodgeville, the county seat and nearest banking point, 38 miles from Madison, 120 miles from Milwaukee and 205 miles from Chicago. American Express. Telegraph and telephone. Shipping facilities and passenger service fair.

The village is supplied with a drug store, 2 grocery stores, 2 hardware stores, 4 general merchandise stores, 2 hotels, 4 boarding houses, graded school employing 3 teachers,

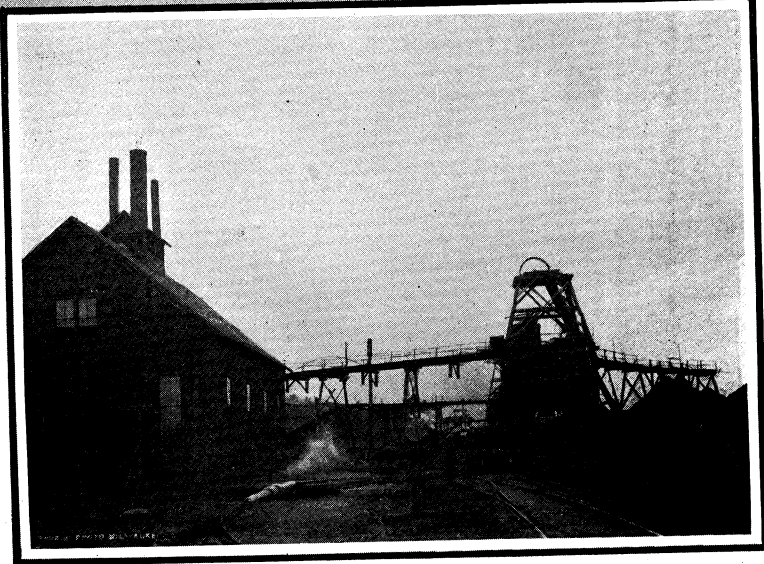
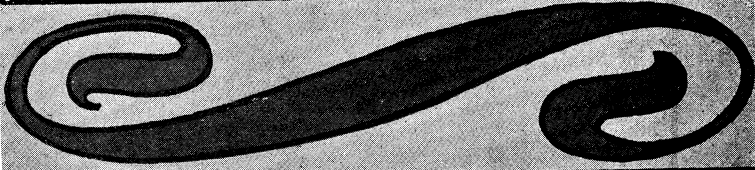
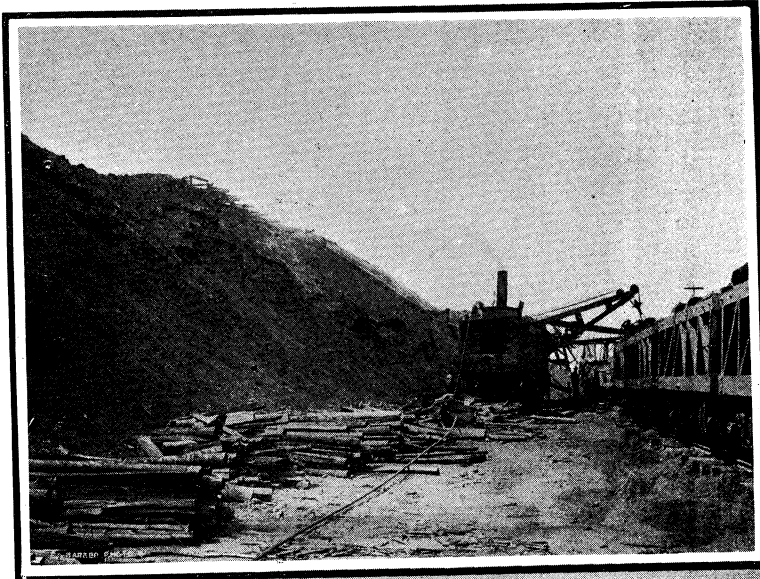
2 churches, one physician, meat market, blacksmith shop, shoe shop and feed mill.

Wood and coal are used for fuel. Wood is obtained in the village and coal at Milwaukee. Vegetables can be furnished for canning purposes and special inducement would be offered for a factory. Plenty of help can be secured.

About one half of the land surrounding the village suitable for crop raising is improved. The land is rough but the soil is fertile and good crops are produced.

IRON COUNTY.

Iron county is located in the northern part of the state on the Michigan-Wisconsin boundary line. It has an area of 786 square miles. The population in 1905 was 6,559. Over one-third of the population is of foreign birth, the chief nationalities represented being Finns, Italians and Canadians. The chief industry of the county is mining. There is as yet very little agriculture. The total farm area in 1905 was but 15,921 acres, or but a little over 3% of the total area of the county. Only 4,619 acres are improved land. The value of these farms in 1905, including improvements, was \$230,240. There was practically no farming prior to 1890. The principal agricultural products are oats and hay of which a large crop is yielded to the acre. The surface of the county is very broken and hilly on account of the Penokee iron range which passes through the northern part and the accumulations of glacial drift which are found in the southeastern portion. The county is traversed by several short and very rapid streams in the northwestern part and is dotted with small lakes in the southeastern portion. The soils in the northern part along Lake Michigan are heavy clays. The major portion of the northern half of the county is a loamy clay of the medium variety and very fertile, excellent both for general farming and dairying. The soils of the southern portion are light clayey loams and are in places quite stony. Some of these sections in the southwestern part are covered with heavy accumulations of sand and gravel, making a soil of comparatively low fertility. The price of unimproved land averages about \$5 per



LOADING IRON ORE ON CARS.
SHAFT HOUSE, IRON MINE, GOGEBIC RANGE.

acre. For improved farm lands the price ranges from \$25 to \$45 per acre. Hurley is the county seat and largest city. The population of the local political divisions for 1905 was as follows:

IRON COUNTY.

TOWNS, CITIES AND VILLAGES.	Families.	AGGREGATE POPULATION.			COLOR.			Ex-olders and sailors.	Militia.
		Male.	Female.	Total.	White.	Colored.	Indians.		
Anderson	46	161	113	274	274	.....	.....	1	64
Knight	207	657	487	1,144	1,144	.....	.....	1	329
Montreal	200	640	468	1,108	1,108	.....	.....	.....	209
Saxon	137	387	276	663	663	.....	.....	.....	107
Vaughn	672	1,877	1,493	3,370	3,370	.....	.....	3	753
Total	1,262	3,722	2,837	6,559	6,559	.....	.....	14	1,522

GILE.

Gile, Iron Co., is an unincorporated village of about 450 population, located on the Wisconsin Central and the C. & N. W. railroads, 42 miles from Ashland, 163 miles from Wausau, 239 miles from Green Bay, 387 miles from Chicago and 302 miles from Milwaukee. National and American Express. Passenger and freight facilities good.

The village has some undeveloped water power and plenty of land near the depot suitable for manufacturing or business purposes. Such raw materials as sand, stone, iron and timber can be supplied, and any industry which can utilize these materials is best suited for the place. A paper or box factory is desired. Plenty of laborers can be procured.

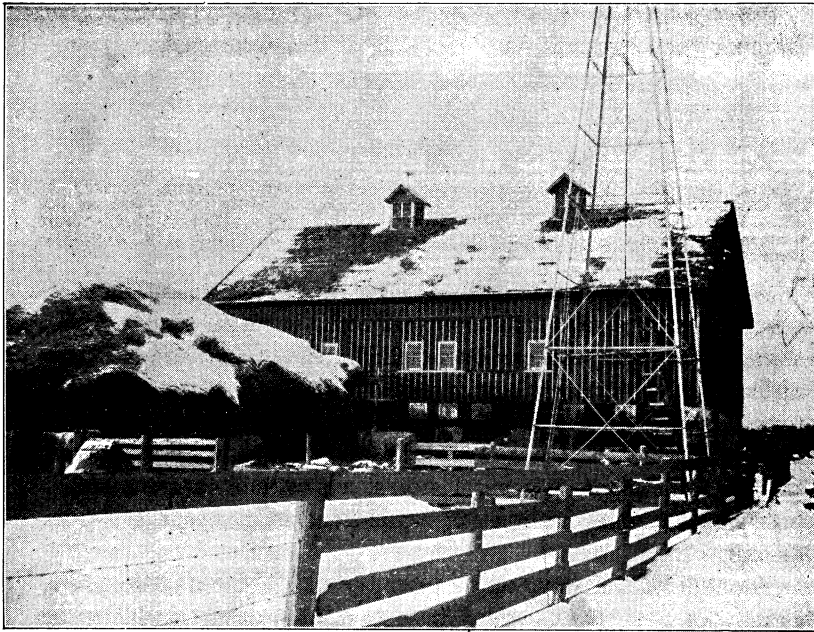
The village was formerly a saw-mill town but when the supply of white pine became exhausted, the mills moved away. The inhabitants are now turning their attention to cultivating the soil. There is one grocery and one hardware store, 2 physicians, and 2 boarding houses but no hotel. The village is located near a beautiful lake on a stream of water, and can be made a summer resort.

The land of the surrounding country is excellent for farming purposes, but little of which is improved.

HURLEY.

Hurley, Iron Co., is an unincorporated village of about 2,000 inhabitants, located on the C. & N. W. and the Wisconsin Central railroads, 385 miles from Chicago, 300 miles from Milwaukee, 217 miles from Oshkosh and 39 miles from Ashland. National and American Express. Telegraph and telephone. Has 16 trains daily carrying passengers, and excellent freight facilities.

Plenty of land can be procured here for manufacturing purposes, and a splendid water power can be developed for almost any new industry. Coal is shipped from Ashland, 39 miles away. Such raw materials as small fruit, vegetables, iron, timber and stone can be supplied, and any industry utilizing these can be supported.



FIFTEEN YEARS SHOWS A BARN LIKE THIS.

The village is supplied with an electric light plant, an excellent system of water works, a bank, good schools, 3 hotels, 3 general stores, 5 groceries, 2 hardwares, 3 drug and jewelry stores, 4 physicians, 5 lawyers, 1 laundry, bottling works, 4 meat markets, 4 dress making establishments, 1 foundry, 1 milliner, 3 confectionery establishments, 1 cigar factory, 2 furniture stores, 1 livery stable, 2 newspapers, 2 wall paper and paint shops, 1 lumber mill, 2 barbers, 2 bakeries, 2 dentists, and 1 photographer.

As yet the surrounding country is largely devoted to the mining of iron.

MONTREAL.

Montreal, Iron Co., is an unincorporated village of about 500 inhabitants, located on the C. & N. W. and the Wisconsin Central railroads, 5 miles from Hurley, 390 miles from Chicago, 305 miles from Milwaukee and 222 miles from Oshkosh. Telegraph and telephone. Good freight and passenger accommodations. National and United States Express.

Plenty of land can be had for manufacturing or business purposes. No raw material can be supplied unless it is shipped in. Coal is shipped from Ashland. The village has a good supply of water for household purposes, but none for manufacturing purposes. There is 1 drug store, 4 groceries, a hardware store, a blacksmith shop and 2 physicians located here.

About one-half of the surrounding country is suitable for farming purposes, and but very little of it is improved.

SAXON.

Saxon, Iron Co., is an unincorporated village of about 400 people, located on the C. & N. W. and the D., S. S. & A. railroads, 397 miles from Chicago, 312 miles from Milwaukee and 27 miles from Ashland. Has splendid freight and passenger facilities. Telegraph and telephone. United States and American Express.

Wood is the principal fuel procured from the surrounding forests. Such raw materials as small fruit, vegetables, clay, sand, stone, timber and iron can be supplied and any industry that can utilize these materials is best suited for the place. A canning factory, foundry, broom handle establishment and a furniture factory would probably do well here. The village is supplied with an electric light plant, 2 general stores, a saw mill, a creamery, 2 hotels, and 2 boarding houses. Lake Superior is about $4\frac{1}{2}$ miles distant.

The soil of the surrounding country is good, but little stony, marshy or sandy. Much of it is yet unimproved and can be procured at a very reasonable price.

JACKSON COUNTY.

Jackson county is located in the west central part of the state. The area is 978 square miles. The population in 1905 was 17,579, a gain of 113 over the census of 1900. About one-fifth of the population is foreign born, of which number, Norwegians are by far the most numerous. The farm acreage in 1905 was

353,368 acres, of which amount 157,713 acres were improved. The farm acreage in 1890 was 284,384 acres, with 119,412 acres improved. The value of the farms and improvements in 1905 was \$8,117,445 as compared with \$3,207,430 in 1890, a gain of \$4,910,015, or over 150% in 15 years. With the exception of occasional ridges and isolated bluffs the surface away from the Black river is comparatively level or gently sloping. The soil covering the larger portion of the county is sandy, light and porous, containing a variable amount of clay grading into loams. The central part of the county, the valley of the Black river and its tributaries, is quite sandy. Over a large part of the area sandy sub-soils or the sand rock is within a few inches of the surface. Clayey loam occurs in the low marshy places. Humus soils, composed mainly of muck and peat, occur in scattered areas through the county, mainly in the southern and eastern part. The forest trees of this county were mainly pine which has long since been cut away. The principal crops and their acreage in 1890 and 1905 were as follows:

	Acreage in 1890.	Acreage in 1905.
Wheat	10,060	5,730
Corn	13,222	14,950
Oats	28,713	47,423
Barley	494	2,611
Rye	3,665	5,020
Hay	30,347	31,900

In 1905 there were 11 creameries in the county. There are nearly 300 acres devoted to the culture of cranberries. It is the second largest berry-growing county in the state. The soil, owing to its diversified nature, varies greatly in price. For unimproved land the prices range from \$5 to \$50 per acre. The price of improved land ranges from \$25 to \$60 per acre. Black River Falls is the county seat. The population of the cities, villages and towns of the county for 1905 was as follows:

JACKSON COUNTY.

TOWNS, CITIES AND VILLAGES.	Families.	AGGREGATE POPULATION.			COLOR.			Ex-soldiers and sailors.	Milita.
		Male.	Female.	Total.	White.	Colored.	Indians.		
Albion	320	981	795	1,776	1,776	.....	.....	10	326
Alma	217	497	423	920	920	.....	.....	3	164
Alma Centre, village..	103	202	212	414	414	.....	.....	10	78
Merrillan, village	173	311	338	649	649	.....	.....	22	112
Bear Bluff	33	92	63	155	155	.....	.....	3	27
Black River Falls:									
ward 1.....	112	201	253	454	454	.....	.....	.....	.....
ward 2.....	84	174	2.8	382	382	.....	.....	.....	.....
ward 3.....	68	148	161	309	308	1	.....	.....	.....
ward 4.....	174	388	413	801	798	3	.....	.....	.....
Total, city, 1,946								37	305
Brockway	160	378	327	705	655	.....	50	18	86
City Point	67	171	147	318	318	.....	.....	1	57
Cleveland	178	478	428	906	906	.....	.....	6	153
Curran	131	351	307	658	658	.....	.....	5	123
Franklin	130	394	330	724	724	.....	.....	3	128
Garden Valley	150	419	354	773	773	.....	.....	5	154
Garfield	147	442	337	779	779	.....	.....	2	137
Hixton	194	477	430	907	907	.....	.....	16	174
Irving	195	510	436	946	946	.....	.....	10	210
Knapp	60	156	152	308	308	.....	.....	7	39
Manchester	139	359	333	692	620	.....	72	18	89
Meirose	319	834	767	1,601	1,601	.....	.....	21	294
Millston	80	198	176	374	374	.....	.....	4	45
Northfield	196	558	481	1,039	1,039	.....	.....	6	192
Springfield	198	544	445	989	989	.....	.....	4	227
Total	3,628	9,263	8,316	17,579	17,453	4	122	211	3,121

ALMA CENTER.

Alma Center, Jackson Co., is an incorporated village of 414 inhabitants, situated on the Green Bay & Western Ry., 152 miles from Green Bay and 87 miles from La Crosse. American Express. Telegraph and telephone. Four daily passenger trains. Fairly good freight accommodations.

Coal and wood are the fuels used, the former being shipped from either Green Bay, La Crosse or Milwaukee, the latter being procured from the surrounding country. Such raw materials as fruit, vegetables, clay, sand, stone, peat and some timber can be supplied, and any industries utilizing these are desirous. A cold storage and tobacco plant are also desired here. Plenty of help can be procured. Good well water is supplied for household use. The village is supplied with a bank, 1 drug store, 2 general stores, 2 hardware stores, a newspaper, 2 physicians, 2 hotels, a harness shop, a dentist, an elevator, 1 meat market, 2 creameries, a barber shop, 1 jewelry store, blacksmith shop, a

photographer, and a public school employing 5 teachers. A good bonus would be offered for a canning factory.

All the land suitable for farming purposes in surrounding the village is improved. The soil is fertile and well adapted to general farming and stock raising.

BLACK RIVER FALLS.

Black River Falls is the county seat of Jackson county, has a population of 1,946. Located on the C. St. P. M. & O. Ry., 210 miles from Milwaukee, 257 miles from Chicago and 144 miles from St. Paul. Has first class facilities for receipt and shipment of freight. Has 4 passenger trains daily. American Express. Telephone and telegraph.

The city is supplied with an electric light plant, 2 banks, 4 physicians, 5 lawyers, a splendid public school system, 2 drug stores, 6 groceries, 2 hardware, 2 dry goods stores, 1 laundry, 3 good hotels, 6 or 7 boarding houses, 2 weekly newspapers, a feed mill, flouring mills, 2 elevators, a creamery, sash and door factory and planing mill, a brewery, wagon shops and iron works. The city has a splendid park stretching along the river and can be made a summer resort. A 20,000-horse water power can be developed here on Black river near the city. Wood procured from the surrounding country, is the principal fuel. Fruit and vegetables can be procured for a canning and preserving factory. In the vicinity are almost inexhaustible beds of kaolin and kaolin shale. From the latter is made the finest brick to be procured on the market anywhere. There is no doubt but what capital could be very profitably invested in promoting the brick industry at this place.

The soil of the surrounding country is good for general farming, portions of it being sandy, but all fairly level and free from stone. There are many fine trout streams in this section of the state.

HIXTON.

Hixton, Jackson Co., is an unincorporated village of about 200 people, located on the Green Bay & Western Ry., 158 miles from Green Bay and 81 miles from La Crosse. Has fairly good freight and passenger facilities. Telephone and telegraph. American Express.

The village is supplied with 1 drug store, 3 groceries, 2 hardwares, 2 dry goods stores, 1 harness and shoe store, 1 furniture and undertaking establishment, a creamery, 2 flouring mills, a graded school, 1 physician and 2 hotels. Coal shipped from Green Bay and wood procured from the farmers near by are the fuels. Such raw materials as fruit, vegetables, clay, sand, stone

and oak timber can be procured in the immediate vicinity. A brick yard and a glass factory are desired at this place. Help would have to be secured from elsewhere. A blacksmith and repair shop is desired and would do well.

The surrounding country is well improved, the soil is a clayey loam with clayey subsoil, but little rough or sandy, and free from swamps. Dairying and stock raising are coming to the front in this vicinity.

MERRILLAN.

Merrillan, Jackson Co., is an incorporated village of 649 inhabitants, situated on the G. B. & W. Ry., 148 miles from Green Bay and 91 miles from La Crosse, and on the C. S. P., M. & O. Ry., 132 miles from St. Paul, 270 miles from Chicago and 222 miles from Milwaukee. Freight and passenger facilities first class. Telegraph and telephone. American Express.

The village has an electric light plant, 1 bank, 1 drug store, 5 groceries, 1 hardware, 3 dry goods stores, 1 laundry, 1 blacksmith shop, 1 millinery store, 1 furniture store, 1 hotel, 1 restaurant, 3 boarding houses, a high school employing 6 teachers, 1 physician, and 2 lawyers. Work has begun on a dam 6 miles southeast of the village which will cost \$1,000,000 and will furnish all the electric power needed for any purpose in this or other villages within a reasonable distance. This dam will be 5 miles long and 3 miles wide and will make a suitable summer resort. Such raw materials as sand, clay, vegetables and fruit are available. A canning or pickling factory is best adapted for the place. Plenty of help can be secured here.

The surrounding country is excellent for farming purposes, and is nearly all improved within a radius of 6 or 8 miles. The soil is excellent and dairying is becoming the leading industry.

JEFFERSON COUNTY.

Jefferson county is located in the southeastern part of the state. The area is 548 square miles. The population in 1905 was 34,293. Nearly one-fifth of the population is foreign born of which number Germans are by far the most numerous. It is an excellent agricultural county. The farm area in 1905 was 321,903 acres, of which 234,960 acres was improved land. The value of these farms in 1905 including improvements was \$21,246,256 as compared with \$16,534,724 in 1890. The topography is of the irregular rolling type characteristic of glacial deposits. The

soils over the larger part of the county are clayey loams of the lighter and medium varieties. Extending from the northwestern part of the county down to within a few miles of the southern boundary is a wide belt of loamy clay, very fertile and one of the best soils in the state. Numerous lakes and irregular areas of humus soils composed mainly of muck and peat are found in various parts of the county. The chief crops and the acreage devoted to each in 1890 and 1905 were as follows:

	Acreage in 1890.	Acreage in 1905.
Wheat	16,740	3,568
Oats	25,629	43,179
Barley	21,463	13,471
Rye	4,696	4,610
Corn	30,511	42,018
Hay	59,845	55,662

This county in recent years has made great strides in the dairy industry and is becoming famous for the production of dairy cows and heifers. The sale of such cows and heifers last year netted one-half a million dollars. In 1905 there were 4 cheese factories, 16 creameries and 19 skimming stations in the county. There is very little unimproved land which can be made tillable that is not owned in connection with improved land, the unimproved and improved land selling together. The only unimproved land consists of marshes or wood land, and ranges in price all the way from \$15 to \$100 per acre, depending upon quality of soil and amount of timber. The heavy clay and loamy clay farms range in price from \$80 to \$125 per acre, and there are some sales recorded at as high as \$150 per acre. Jefferson is the county seat. The population of the cities, towns and villages of the county for 1905 was as follows:

FORT ATKINSON.

Ft. Atkinson, Jefferson Co. Population, 3,300. An incorporated city located on Rock river, and on the C. & N. W. Ry., $5\frac{1}{4}$ miles southwest of Jefferson, the county seat, 19 miles from Janesville, 41 miles from Madison, 59 miles from Milwaukee and 110 miles from Chicago. American Express. Telephone and telegraph. Good freight facilities and passenger service.

The city has macadamized streets, 12 miles of cement sidewalk, 2 public parks shaded with large oaks, city hall, is lighted by electricity, has a good system of water works, 2 banks, 3 drug

JEFFERSON COUNTY.

TOWNS, CITIES AND VILLAGES.	Families.	AGGREGATE POPULATION.			COLOR.			Ex-soldiers and sailors.	Militia.
		Male.	Female.	Total.	White.	Colored.	Indians.		
Aztalan	215	531	508	1,039	1,037	2			216
Cold Spring	111	308	253	561	557	4		3	129
Concord	265	593	566	1,159	1,159			8	237
Farmington	303	784	715	1,499	1,499			1	247
Johnson Creek, vil.	122	258	236	494	492	2		5	108
Fort Atkinson, city:									
ward 1	227	335	469	854	845	9			130
ward 2	209	366	414	780	779	1			161
ward 3	175	325	366	691	691				123
ward 4	261	478	497	975	975				195
Total, city...3,300								49	
Hebron	209	475	455	930	930			9	181
Ixonia	282	669	603	1,272	1,272			7	271
Jefferson	336	939	829	1,768	1,766	2		4	290
Jefferson, city:									
ward 1	138	300	302	602	602				107
ward 2	176	375	381	756	756				149
ward 3	194	343	371	714	714				143
ward 4	121	245	255	500	500				88
Total, city...2,572								16	
Koshkonong	301	773	666	1,444	1,444			6	277
Lake Mills	254	636	557	1,193	1,193			4	219
Lake Mills, village....	411	746	856	1,602	1,596	6		20	220
Milford	269	625	589	1,214	1,214			8	214
Oakland	250	674	573	1,247	1,247			4	246
Palmyra	155	368	348	716	716			9	161
Palmyra, village	200	342	368	710	709	1		24	120
Sullivan	286	642	608	1,250	1,250			21	240
Sumner	109	250	205	455	455			4	116
Waterloo	171	476	409	885	885			2	175
Waterloo, village	286	511	595	1,106	1,106			15	179
Watertown	318	780	697	1,477	1,477			7	286
Watertown, city:									
ward 1	536	1,220	1,246	2,466	2,466				469
ward 2	377	671	807	1,478	1,474	*3	1		262
ward 3	243	460	56	966	966				155
ward 4	150	241	287	528	528				91
ward 7	216	499	463	962	962				164
Total, city...78,622								35	
Total	7,866	17,293	17,000	34,293	34,262	30	1	261	6,369

†Includes total in Dodge and Jefferson counties.

*1 Chinaman.

stores, 5 grocery, 3 hardware, 4 dry goods and 3 general merchandise stores, 2 hotels, 1 boarding house, 6 physicians, 4 lawyers, 2 high and 3 public schools, 21 teachers employed, public library, Catholic, Congregational, German, Methodist, Methodist Episcopal, Lutheran and Evangelical Lutheran churches. Has a laundry, bakery, 2 harness shops, 3 jewelry stores, 2 photographers, 6 blacksmith shops, 2 lumber yards, 3 grain elevators, creamery and cold storage, canning factory, a brick manufacturing company, wagon and carriage factory, broom factory, cutlery factory, brewery and cigar factories. Three weekly newspapers are published.

A first-class hotel is needed. Any kind of manufacturing industries would do well.

Steam power is used here. Coal is used for fuel, obtained at Milwaukee or Chicago. Clay, sand, stone, peat and timber are the natural products. Help can be secured in the city.

The city is located in one of the best farming sections in the state. The land is either under cultivation or covered with fine groves of timber. The soil is a rich clayey loam.

JEFFERSON.

Jefferson, Jefferson Co. Population, 2,572. A city in the south central part of Jefferson county, of which it is the county seat, on the C. & N. W. Rty., 28 miles from Janesville, 35 miles from Madison, 53 miles from Milwaukee and 119 miles from Chicago. American Express. Telephone and telegraph. Good shipping facilities and passenger service.

Jefferson is beautifully situated on the banks of the Rock river and is a flourishing industrial center. Owns its electric light plant and water works, has fine streets and walks, good private and public buildings and beautiful residences.

Is supplied with a complete system of water works, is lighted by electricity, has 2 banks, 2 drug stores, 4 groceries, 3 merchandise stores, 2 jewelry stores, 4 hotels, 2 boarding houses, high and public schools employing 21 teachers, 5 churches, 2 parochial schools, 5 physicians, 2 lawyers, a laundry and 3 meat markets. In the manufacturing industries, it has two shoe factories, a furniture factory, two breweries, a malt house, a woolen mill, sash and door factory, packing house, several cigar factories, 2 tanneries, 2 brick yards, and 2 creameries. Two English and one German newspaper are published. Has no gas plant or electric railway.

Steam power is used here. Coal is used for fuel, obtained from Chicago and Milwaukee. All kinds of fruit and vegetables can be furnished for canning. Sand and brick clay are the natural products. There is plenty of help to be had in the city and adjacent country. There are no idle factories in the city.

The city is surrounded by as good a farming country as there is in Wisconsin and the land is all improved.

A good location for any manufacturing industries not already represented here.

JOHNSON'S CREEK.

Johnson's Creek, Jefferson Co. Population, 494. An incorporated village located in the north central part of the county, on the C. & N. W. Ry., $5\frac{1}{2}$ miles north of Jefferson, the county seat, 30 miles from Janesville, 34 miles from Madison, 52 miles from Milwaukee and 137 miles from Chicago. American Express. Telegraph and telephone. Good passenger service and shipping facilities.

The village has a bank, 2 drug stores, 2 hardware stores, 2 general merchandise stores, 2 hotels, graded school employing 4 teachers, Methodist and Lutheran churches, 2 physicians, 2 blacksmith shops, 1 wagon shop, a feed mill and lumber yard.

Steam power would have to be used here. Coal is used for fuel, obtained at Fond du Lac and Milwaukee. The natural products are sand and clay used in the manufacture of cream colored bricks. Good location for a brick yard. A limited amount of help can be secured.

The village is surrounded by a fine farming country and all of the land is improved.

LAKE MILLS.

Lake Mills, Jefferson Co. Population, 1,602. An incorporated village on the C. & N. W. Ry., in the western part of the county, 9 miles from Jefferson, the county seat, 26 miles from Madison, 56 miles from Milwaukee and 141 miles from Chicago. American Express. Telegraph and telephone. Good shipping facilities and passenger service.

The village has electric lights, 2 banks, 2 drug stores, 4 groceries, 2 hardware and 4 dry goods stores, 1 laundry, 2 hotels, 3 physicians, 2 lawyers, good public schools employing 9 teachers, churches of the leading religious denominations, a creamery and package manufactory. A weekly newspaper is published.

Coal for fuel is shipped from Milwaukee and Chicago. Such raw materials as fruit and vegetables, can be furnished for canning. The natural products are clay, sand and peat. There are large quantities of peat in the vicinity making this a good location for a plant manufacturing this product into fuel. Also a good lo-

cation for a brick yard. Plenty of help can be secured in the village.

The surrounding country is all level and free from stone and all improved. The village is a summer resort of considerable importance. Situated on Rock Lake, a very picturesque body of water, 3 miles long and 2 miles wide, with many fine cottages. The village has macadamized streets, cement walks, shade trees, a fine public park and a \$20,000 free public library.

PALMYRA.

Palmyra, Jefferson Co. Population, 710. An incorporated village in the southeastern part of the county, on the C., M. & St. P. Ry., 41 miles from Janesville, 54 miles from Madison, 42 miles from Milwaukee and 127 miles from Chicago. United States Express. Telegraph and telephone. Good shipping facilities and fair passenger service.

The village is supplied with a gas plant, a bank, drug store, 5 grocery stores, 2 hardware and 3 dry goods stores, clothing store, 3 millinery stores, 2 jewelry stores, furniture store, 2 hotels, 4 physicians, 2 lawyers, high and graded public schools employing 7 teachers, good churches, meat market, 2 lumber yards, 2 flour mills, 3 blacksmith shops, creamery, repair shop and paint shop. A weekly newspaper is published. Palmyra Springs Sanitarium is located near the village on the margin of Mineral Springs lake and commands a fine view of the lake and surrounding landscape.

There is a small water power here. Wood and coal are used for fuel; wood is obtained from the surrounding country and coal from Milwaukee. Such raw materials as fruit and vegetables can be furnished for canning. Clay, sand, stone and peat are the natural products. All the help needed can be secured in the vicinity.

The surrounding country is good for agricultural purposes and the land is nearly all improved.

Palmyra is a popular summer resort, and a very beautiful village, surrounded by picturesque scenery, is near a pretty lake and wonderful mineral springs. The village needs a first-class hotel and boarding houses.

This is a good location for a canning factory and a condensed milk factory.

ROME.

Rome, Jefferson Co. Population, 300. An unincorporated village on the Rock river, $2\frac{1}{2}$ miles from Sullivan, the nearest railway station, 12 miles east of Jefferson, the county seat, and 8 miles from Palmyra, the nearest banking point. Has telephone connections.

The village is supplied with 2 general merchandise stores, a shoe store, 2 hotels, graded public school employing 2 teachers, good churches, 1 physician, a meat market, 2 blacksmith shops, barber shop, creamery, saw mill and flour mill. The saw and flour mills are run by water power, only a small per cent of which is utilized.

Wood is used for fuel, obtained from the adjacent country. Fruit, vegetables and fish can be supplied for canning. There is a good opening here for a canning factory. Clay, sand, some peat and timber are the natural products. Help is plenty in the vicinity.

The village is surrounded by a first-class farming country, and about 75 per cent of the land, suitable for crop raising, is improved. Rome is located on the shore of a lake covering about three sections of land and could be made a fine summer resort.

WATERLOO.

Waterloo, Jefferson Co. Population, 1,106. An incorporated village in the extreme northwestern part of the county, on the Watertown branch of the C., M. & St. P. Ry., 13 miles from Watertown, 23 miles from Madison, 58 miles from Milwaukee and 143 miles from Chicago. United States Express. Telegraph and telephone. Good shipping facilities and passenger service.

The village is supplied with electric lights, a bank, 2 drug stores, 2 hardware stores, 4 general merchandise stores, 2 grocery stores, 2 good hotels, 2 boarding houses, an excellent high and graded school system employing 12 teachers, Catholic, Episcopal, Lutheran and Methodist churches, a Mutual Fire Insurance company, 2 grain elevators, 2 creameries, 2 flouring mills, malt house, canning factory, machine shop, cold storage, 4 ice companies and two weekly newspapers.

There is a small water power here, not estimated. Clay, peat and timber are the natural products. Coal is used for fuel, obtained at Milwaukee. Help can be secured here. A shoe factory would be best suited to the needs of the village.

The village is surrounded by a good farming country, good soil and level and free from stone. Dairying is the principal occupation of the people.

JUNEAU COUNTY.

Juneau county is located in the west central part of the state. The area is 790 square miles. The population in 1905 was 20,759, a gain of 130 over the census of 1900. About one-sixth of the population is foreign born, Germans being the most numerous, but there are also many Norwegians and Danes. The farm area of the county is 320,916 acres, of which 138,925 acres are improved. The farm area in 1890 was 265,974 acres of which 112,673 acres were improved. The value of these farm lands, including improvements in 1905 was \$7,398,920 as compared with \$3,630,805 in 1890, or a gain of \$3,768,115, or over 100% in 15 years. The surface of the county is gently sloping but comparatively level except in the southern part. In parts it is dotted with mounds of sandstone, some of which are mere swells, while others are rugged pinnacles or peaks rising abruptly to a considerable height. The county contains extensive tracts of marsh land, especially in the northeastern corner where the soils are of a humus character consisting mainly of muck and peat. In the eastern part along the Wisconsin river and its tributaries the soils are mainly sandy. Those in the southern and southwestern portions are mainly sandy loams. Small areas of clayey loams occur in the southwestern section of the county. The forest growth of this county was mainly pine, which has practically all been cut. The principal crops and their acreage in 1905 and 1890 were as follows:

	Acreage in 1890.	Acreage in 1905.
Oats	21,048	27,692
Rye	5,865	6,916
Buckwheat	6,834	4,439
Corn	11,170	14,523
Hay	25,471	33,757
Potatoes	3,087	7,096

There were 6 cheese factories and 9 creameries in the county in 1905. The northern part of the county is largely unimproved land ranging in price from \$4 to \$20 per acre. A large part of this land can never be made very productive. The range of prices for improved farm land is from \$30 to \$60. Mauston is the county seat. The population of the different political divisions for 1905 was as follows:

JUNEAU COUNTY.

TOWNS, CITIES AND VILLAGES.	Families.	AGGREGATE POPULATION.			COLOR.			Ex-soldiers and sailors.	Militia.
		Male.	Female.	Total.	White.	Colored.	Indians.		
Armenia	180	429	408	837	829	7	.....	10	138
Clearfield	106	260	238	498	498	.....	.....	10	78
Cutler	72	192	189	381	381	.....	.....	8	57
Elroy, city:									
ward 1.....	203	439	461	900	899	1	.....	15	178
ward 2.....	216	532	529	1,111	1,111	.....	.....	17	312
Total, city, 2,011									
Finley	30	75	69	144	144	.....	.....	.....	18
Fountain	187	550	468	1,018	1,018	.....	.....	11	192
Germantown	104	334	289	623	623	.....	.....	3	95
Kildare	103	293	243	536	536	.....	.....	3	98
Lyndon Station, vil...	64	161	127	288	288	.....	.....	5	34
Kingston	67	137	140	277	273	4	.....	6	44
Lemonweir	233	570	489	1,059	1,035	24	.....	10	133
Lindina	217	5+2	477	1,019	1,019	.....	.....	12	211
Lisbon	125	320	293	613	613	.....	.....	5	112
Lyndon	98	250	228	478	478	.....	.....	4	100
Marion	75	239	197	436	436	.....	.....	5	57
Mauston, city:									
ward 1.....	280	517	573	1,090	1,089	1	.....	33	187
ward 2.....	190	357	410	767	767	.....	.....	15	133
Total, city, 1,857									
Necedah	133	360	302	662	662	.....	.....	20	328
Necedah, village	271	542	574	1,116	1,116	.....	.....	30	328
New Lisbon, city:									
ward 1.....	144	283	279	562	562	.....	.....	22	92
ward 2.....	128	262	271	533	533	.....	.....	19	71
Total, city, 1,085									
Orange	119	301	272	573	573	.....	.....	4	95
Camp Douglas, village	105	217	218	435	435	.....	.....	5	86
Plymouth	183	472	334	866	866	.....	.....	6	188
Seven Mile Creek.....	142	429	377	806	806	.....	.....	5	198
Summit	206	494	482	976	976	.....	.....	5	200
Wonewoc	300	753	715	1,468	1,468	.....	.....	20	284
Wonewoc, village	195	340	347	687	686	1	.....	28	111
Total	4,476	10,700	10,069	20,759	20,721	14	24	316	3,800

CAMP DOUGLAS.

Camp Douglas, Juneau Co. Population, 435. An incorporated village located at the junction of the C., M. & St. P. Ry., and the C., St. P., M. & O. Ry., in Orange township, 56 miles from La Crosse, 95 miles from Eau Claire, 88 miles from Madison, 142 miles from Milwaukee and 227 miles from Chicago. American and United States Express. Telegraph and telephone. Shipping facilities and passenger service of the very best.

The village is supplied with a bank, drug store, 4 groceries, 2 hardware and 3 dry goods stores, shoe store, 2 hotels, 2 physicians, graded schools employing 4 teachers, good churches, harness shop, jewelry store, blacksmith shop, and meat markets.

Wood and coal are the fuels used and wood is plenty in the vicinity. If a canning factory should locate here it could be supplied with fruit and vegetables. There is a large amount of

clay, sand, stone and some peat and timber. There is very little help to be secured in the village.

This is a fine location for a pickle salting station or the manufacturing of sand bricks.

There is some good farming country surrounding the village and 75 per cent of the best land is improved. North of the village the land is level and sandy; south hills and valleys with a clayey and black loam soil.

ELROY.

Elroy, Juneau Co. Population, 2,011. An incorporated city in the southwestern part of the county on the C. & N. W., and the C., St. P., M. & O. Rys., 58 miles from La Crosse, 76 miles from Madison, 158 miles from Milwaukee and 213 miles from Chicago. American Express. Telegraph and telephone. Shipping facilities and passenger service good.

The city is supplied with municipal water and electric light plant, a good sewerage system, 2 banks, 2 drug stores, 3 groceries, 2 hardware and 5 general merchandise stores, 3 hotels, 3 boarding houses, 5 physicians, 3 lawyers, excellent school system employing 16 teachers, numerous churches, 4 agricultural implement dealers, 2 elevators, 3 coal and wood dealers, blacksmith shops, meat markets, and 2 weekly newspapers. The city is in need of a first class hotel.

Steam power is used here for manufacturing purposes, and wood and coal are used for fuel. Wood is plentiful in the vicinity. Fruit and vegetables can be supplied for canning. This is a good location for a canning factory. The city can be supplied with clay, sand, stone, peat and hardwood timber. There is a good opening here for a small factory using hardwood timber products. An abundance of help can be secured in the city.

The surrounding country is hilly but contains much good farming land. About 75 per cent of the land suitable for crop raising is improved.

HUSTLER.

Hustler, Juneau Co. Population, 150. An unincorporated village located on the C., St. P., M. & O. Ry., in Fountain township, 85 miles from Madison, 167 miles from Milwaukee and 225 miles from Chicago. American Express. Telegraph and telephone. Good railway facilities.

Has 2 hardware and 3 general merchandise stores, hotel and boarding house, a school employing 2 teachers, a physician, a creamery and a blacksmith shop. Fuel is cheap and help plenty. There is much good farm land in the vicinity and all the land suitable for crop raising is improved. This is a prosper-

ous little village and would be a good location for some small industry.

LYNDON.

Lyndon, Juneau Co. A small village of about 300 inhabitants in Kildare township, on the C., M. & St. P. Ry., 10 miles southeast of Mauston, 26 miles from Portage, 63 miles from Madison, 119 miles from Milwaukee and 204 miles from Chicago. United States Express. Telegraph and telephone. Good freight facilities and passenger service.

Is supplied with a drug store, hardware store, 3 general merchandise stores, 2 hotels, a boarding house, a physician, a public school, blacksmith shop, wagon shop and a bakery.

Plenty of land here for business or manufacturing purposes. Steam power would have to be used. Wood is used for fuel obtained from the surrounding country. Vegetables are the only raw materials. A limited amount of help can be secured here.

The surrounding country is good for farming and about 75 per cent. of the land suitable for crop raising is improved. The soil is a sandy loam and produces abundant crops of potatoes.

MAUSTON.

Mauston, Juneau Co. Population, 1,857. An incorporated city on the C., M. and St. P. Ry., in the south central part of the county, of which it is the county seat. 73 miles from Madison, 129 miles from Milwaukee and 214 miles from Chicago. United States Express. Telegraph and telephone. Good passenger service and shipping facilities.

The city is supplied with electric lights, has 2 banks, 3 drug stores, 3 hardware stores, 6 general merchandise stores, 1 laundry, 2 hotels, 3 boarding houses, 4 physicians, 6 ing mill, elevator, wagon factory, woolen mill, 3 harness shops, 2 furniture stores, 2 jewelry shops, blacksmith shops, meat markets, pickle factory, cooper shop etc. Two weekly newspapers are published.

Coal and wood are used for fuel. There is plenty of wood near the city. Such raw materials as fruit and vegetables could be furnished for canning. Sand, stone and timber are the natural products. A limited amount of help can be secured in the city. There is a good opening here for a starch or canning factory.

The surrounding country is nearly all level and free from stone. The land is about 7-10 sandy and swampy, and about 2-3 of the land suitable for crop raising is improved.

NECEDAH.

Necedah, Juneau Co. Population, 1,116. An incorporated village in the north-central part of the county, on the C., M. & St. P., and the C. N. W. Rys., 19 miles north of Mauston, the county seat, 37 miles from Grand Rapids, 92 miles from Madison, 148 miles from Milwaukee and 233 miles from Chicago. American and United States Express. Telegraph and telephone. Good shipping facilities and passenger service.

The village is supplied with electric lights, a bank, 2 drug stores, 3 grocery stores, 5 general merchandise stores, 2 hardware stores, 1 furniture store, 3 hotels, a boarding house, 2 physicians, 1 lawyer, good public schools employing 9 teachers, churches of the leading religious denominations, a flour mill, 6 warehouses, meat markets, blacksmith shops, etc.

The village will offer valuable inducements for the establishment of a furniture factory. Wood is used for fuel being obtained from the adjacent country at very reasonable prices. A canning factory can be supplied with such raw materials as fruit and vegetables. The natural products are clay, sand, peat and timber. Plenty of help can be secured here.

There is some good farming land in the surrounding country and only about 1-2 of the land suitable for crop raising is improved. The country is generally level with a rich black muck soil and the higher portions have a sandy loam soil. About 20 per cent. of the land is marshy but is being drained. The main ditches are all completed and when the lateral ditches are completed this will be a fine farming country.

The village is the market and shipping point for a large section of country and is recognized as one of the important potato shipping points in the state.

NEW LISBON.

New Lisbon, Juneau Co. Population, 1,095. An incorporated city located on the La Crosse division and the Wisconsin Valley division of the C., M. & St. P. Ry., and on the Lemonweir river, in Lisbon township, 7 miles northwest of Mauston, 62 miles from La Crosse, 89 miles from Madison, 136 miles from Milwaukee and 221 miles from Chicago. United States Express. Telegraph and telephone. First class shipping facilities. Eight passenger trains daily.

The village has a bank, drug store, 2 grocery stores, 2 hardware and 4 general merchandise stores, 1 hotel, 5 boarding houses, 2 physicians, 3 lawyers, a \$25,000 high school building, 11 teachers employed. Methodist, Episcopal, Baptist, Congregational, Catholic and German Lutheran churches, 2 meat markets, 1 furniture and undertaking establishment, harness shop, photo gallery, a brewery, flour mill, 2 blacksmith and wagon

shops, creamery, 2 wood and coal yards, and 2 weekly newspapers.

Wood and coal are the fuels used, the former obtained at home and the latter shipped in. Such raw materials as fruit and vegetables can be supplied for canning and the natural products are clay, sand, stone and some timber. Plenty of help can be secured in the village and vicinity.

A \$10,000 canning factory failed here some years ago caused by poor management and dissatisfaction of the stock holders. The property can be bought very cheap. Good location for a pickle salting station, tobacco warehouse, bakery, cigar factory or canning factory.

There is some good farming land in the surrounding country and about 75 per cent. of it is improved. One-half of the country is sandy. The village needs a first-class hotel and a good \$1.00 a day house.

UNION CENTER.

Union Center, Juneau Co. Population, 300. An unincorporated village located on the C. & N. W. Ry., in Wonewoc township, 14 miles southwest of Mauston, the county seat, and 3 miles northwest of Wonewoc, the nearest banking point, 70 miles from Madison, 152 miles from Milwaukee and 208 miles from Chicago. American Express. Telegraph and telephone. Good shipping facilities and passenger service. The Hillsboro & Northeastern Ry. connects this village with Hillsboro, Vernon county, 5 miles west.

The village has a drug store, 2 general merchandise stores, hardware store, hotel, boarding house graded school employing 2 teachers, a physician, Catholic and Methodist churches, cheese factory, blacksmith shop, lumber yard and livery stable.

Wood is used for fuel obtained from timber in the vicinity. Fruit and vegetables can be furnished for canning and the village can be supplied with clay, stone and timber. Plenty of help can be obtained in the village and surrounding country.

About 2-3 of the land surrounding the village, suitable for crop raising, is improved.

The village is in need of better hotel accommodations, and a general store.

WONEWOC.

Wonewoc, Juneau Co. Population 627. An incorporated village on the C. & N. W. Ry., located in the southwestern part of the county in Wonewoc township, 65 miles from La Crosse, 67 miles from Madison, 149 miles from Milwaukee and 206 miles from Chicago. American Express. Telegraph and telephone. Good passenger and freight facilities.

The village is supplied with 2 banks, 2 drug stores, 2 hardware stores, 5 general merchandise stores, 1 millinery store and a wholesale merchandise store, 2 good hotels,

high school employing 8 teachers, churches of the leading religious denominations, 3 physicians, flour mill, saw mill and a weekly newspaper. Has paved streets, brick business blocks, good public buildings and residences. Good location for boot and shoe factory and canning factory.

Wood and coal are used for fuel. Wood is obtained from the adjacent country, and coal from the east. Fruit and vegetables are the only raw materials and clay, sand, and hardwood timber are the natural products. Almost any amount of help can be secured here.

About 65 per cent. of the land surrounding the village, suitable for crop raising, is improved. From 60 to 75 per cent. of the land is rough with a heavy clay soil.

KENOSHA COUNTY.

Kenosha county is located in the southeast corner of the state. It is one of the smallest counties in the state having an area of only 274 square miles. The population in 1905 was 27,372, a gain of 5,669 over the census of 1900. Nearly one-fourth of the population is of foreign birth, Germans and Danes constituting the largest number. There are also many Poles and Italians. The farm area in 1905 was 157,366 acres of which 126,434 acres were improved. The farm value in 1905 including improvements was \$8,982,700 as compared with \$7,124,826 in 1890. practically all of the tillable farm land has been put under cultivation prior to 1890. The surface of the county is comparatively level except in the western part where it is hilly. The soils are mainly clayey loams of the lighter varieties. In the central and eastern parts there are considerable tracts of very fertile prairie loams. Irregular areas of humus soils, composed mainly of muck and peat, occur in various sections of the county. There is a narrow strip of land bordering on the lake of which the soil is a sandy loam. The principal crops and the approximate acreage devoted to each in 1890 and 1905 were as follows:

	Acreage in 1890.	Acreage in 1905.
Oats	17,366	19,489
Barley	3,712	1,128
Rye	239	602
Corn	14,281	21,476
Hay	38,341	33,953

Truck farming is one of the leading sources of farm income. The dairy interests of the county are represented by 17 creameries, 1 skimming station and 1 condensing establishment. The price of unimproved land ranges from \$40 to \$60 per acre. For improved land the range of prices is from \$75 to \$115 per acre. Kenosha is the county seat and largest city. The following table shows the population of the cities, villages and towns in the county in 1905:

KENOSHA COUNTY.

TOWNS, CITIES AND VILLAGES.	Families.	AGGREGATE POPULATION.			COLOR.			Ex-soldiers and sailors.	Militia.
		Male.	Female.	Total.	White.	Colored.	Indians.		
Brighton	179	469	409	878	878	.....	.....	3	163
Bristol	244	597	571	1,168	1,168	.....	.....	9	217
Kenosha, city:									
ward 1.....	161	418	537	1,355	1,354	21	.....	.....	.....
ward 2.....	309	873	735	1,608	1,605	3	.....	.....	.....
ward 3.....	763	1,879	1,710	3,589	3,577	12	.....	.....	.....
ward 4.....	633	1,749	1,389	3,138	3,138	.....	.....	.....	.....
ward 5.....	404	1,140	917	2,057	2,052	5	.....	.....	.....
ward 6.....	246	737	547	1,284	1,283	1	.....	.....	.....
ward 7.....	477	863	648	1,511	1,511	.....	.....	.....	.....
ward 8.....	324	890	803	1,693	1,693	.....	.....	.....	.....
Total, city..16,235	.....	.....	.....	.....	.....	.....	.....	61	4,456
Paris	164	416	373	789	789	.....	.....	2	174
Pleasant Prairie	491	1,469	1,106	2,575	2,575	.....	.....	7	671
Randall	158	462	381	843	843	.....	.....	3	145
Salem	422	920	907	1,827	1,827	.....	.....	18	339
Somers	408	1,177	1,015	2,192	2,189	3	.....	14	511
Wheatland	180	469	400	869	869	.....	.....	5	164
Total	5,063	14,928	12,448	27,376	27,330	46	.....	122	6,840

BRISTOL.

Bristol, Kenosha Co. Population, 300. An unincorporated village on the C. & N. W. Ry., in Bristol township, 12 miles west of Kenosha, the county seat and banking point, 45 miles from Milwaukee and 64 miles from Chicago. American Express. Telegraph and telephone. Shipping facilities and passenger service fair.

Has a drug store, hardware store, 4 general merchandise stores, laundry, 1 hotel, a physician, graded school employing 4 teachers, German Lutheran, German Methodist and Methodist Episcopal churches, 2 wagon and woodworking shops, 2 blacksmith shops, lumber and coal yard, tile factory and a creamery. Needs a first class hotel. Could be made a summer resort. Has fine shade trees, nice streets, good schools and churches and several nice lakes near. Good location for a brick yard.

Coal is the fuel used obtained from the lake ports. Clay and sand are the natural products. Plenty of help can be secured in the vicinity.

The village is located in a good agricultural section and 75 per cent of the land suitable for crop raising is improved. There is very little rough land but about 20 per cent is swampy.



SILVER LAKE, WIS.

KENOSHA.

Kenosha, Kenosha Co. Population, 16,235. Is 33 miles from Milwaukee, 51 miles from Chicago and 115 from Madison. C. & N. W., and C. M. & St. P. Rys. Electric lines to Chicago and Milwaukee. Street railway system. Western Union and Postal telegraph and telephone. American and United States Express. County seat.

This city has a good harbor on lake Michigan, waterworks system, gas and electric light plants and a street railway system. Clay, sand and gravel can be obtained in large quantities, while other raw materials can be shipped to this city at reasonable rates by sail-boats and steam-ships. During the last ten years Kenosha has grown rapidly as a manufacturing city until today it ranks as one of the foremost manufacturing cities in the State of Wisconsin. In 1905, there were located in this city 245 factories with an aggregate capitalization of \$9,691,848, employing 4,354 wage-earners and having an annual product of \$12,662,600. The principal manufactured products are leather, iron beds, machinery, malt, brass goods, springs, automobiles, wagons, knit goods, gloves, mittens, furniture and typewriters. Several of the factories located here are the largest of their kind in the world. Every kind of manufacturing is well suited to this city and ow-

ing to its proximity to Milwaukee and Chicago, an extensive market is near at hand. There are no unoccupied factories in this city. Two banks furnish adequate banking facilities. The educational facilities are excellent. Kemper Hall, a school for girls is located here. There are 15 physicians and 12 lawyers. There are 8 hotels which would accommodate 800 persons. A new hotel is needed. Kenosha has gained some reputation as a summer resort.

PLEASANT PRAIRIE.

Pleasant Prairie, Kenosha Co. Population, 200. An unincorporated village on the C. & N. W. Ry., in Pleasant Prairie township, 6 miles southwest of Kenosha, the county seat and nearest banking point, 40 miles from Milwaukee and 58 miles from Chicago. American Express. Telephone and telegraph. Good freight facilities and passenger service.

The village is supplied with 2 general merchandise stores, graded school employing 2 teachers, 1 physician, 2 boarding houses, Methodist church, blacksmith shop and a powder mill.

The village is located in a good farming section and the land is nearly all improved. Dairying is the principal occupation of the people, although some are beginning to raise cabbage and small fruits. This is a good location for a creamery or a condensed milk factory. Help is not very plentiful and steam power would have to be used. Coal is used for fuel obtained at Kenosha.

POWERS LAKE.

Powers Lake, Kenosha Co. Population, 300. A summer resort located on Powers Lake in the southwestern part of the county, 23 miles from Kenosha, 3 miles from Bassett, on the C. & N. W. Ry., the nearest rail approach, 6 miles from Richmond, Ill., the nearest banking point.

Has 1 general merchandise store and 4 summer hotels. Mail daily.

SOMERS.

Somers, Kenosha Co. An unincorporated village of about 200 inhabitants, in the northeastern part of the county on the Chicago and Milwaukee division of the C., M. & St. P. Ry., $7\frac{1}{2}$ miles northwest of Kenosha, the county seat and banking point, 27 miles south of Milwaukee and 58 miles north of Chicago. United States Express. Telegraph and telephone. Good shipping facilities and passenger service.

The village has a good supply of water, a grocery store, hardware store, and a dry goods store, 1 physician, graded school employing 2 teachers, 2 churches, a hotel, grain elevator, blacksmith shop, a mutual fire insurance company, feed mill and a creamery.

Steam power would have to be used here. Fruit and vegeta-

bles can be furnished for canning purposes; clay is the only natural product. A limited amount of help can be had in the vicinity.

This is a fine agricultural section with a black loamy soil. The land is rolling and all improved. Vegetables growing is the principal occupation. There were 350 car loads of cabbage raised in this section in 1905. There are 2 cabbage storehouses here now and there is a demand for another one. Would probably be a good location for a canning factory.

WILMOT.

Wilmot, Kenosha Co. Population, 300. An unincorporated village in the southwestern part of the county on the Fox river, 20 miles from Kenosha, the county seat, 6 miles northwest of Antioch, Ill., the nearest banking point and $2\frac{1}{2}$ miles from Camp Lake, the nearest shipping point. Telephone connections.

Has a drug store, hardware store and 3 general merchandise stores, furniture store, shoe store, 1 hotel, 2 boarding houses, 1 physician, good high school employing 5 teachers, churches, harness shop, blacksmith shop and meat market. A weekly newspaper is published. The village is a summer resort and is in need of a first-class hotel.

Wood and coal are used for fuel. Wood can be obtained from the adjacent country and coal from Kenosha. Such raw materials as fruit and vegetables can be furnished for canning. Clay, sand, gravel and peat are the natural products. Help can be secured in the vicinity. The Fox river furnishes water power.

This is a good farming section and the land is all improved.

KEWAUNEE COUNTY.

Kewaunee county is located in the eastern part of the state on the shore of Lake Michigan. The area is 327 square miles. The population in 1905 was 17,003. Over one-fifth of the population is of foreign birth, of which number Bohemians are the most numerous, but there are also large numbers of Germans and Belgians. Practically all of the county is occupied for agricultural purposes. The farm area in 1905 was 202,446 acres, of which 131,374 acres were improved. The value of these farms in 1905 including improvements was \$8,674,895 as compared with \$4,369,080 in 1890, when the

total farm area was 192,247 acres. From the northeast to the southwest the topography of the county is of the irregularly rolling type, but otherwise the surface has the gently rolling character of the old lake plane of which it forms a part. The soils of this county are almost exclusively clayey loams, the greater portion being of the red clay variety except a strip extending down the central part of the county where the soil is a fertile loamy clay. This soil is well adapted to dairying and stock raising. A narrow strip of land occurs in the northeastern part of the county along the lake shore, and a similar strip extends southward from the center of the county. There are several irregular tracts of swampy soil in different parts of the county. The chief crops and their acreage in 1890 and 1905 were as follows:

	Acreage in 1890.	Acreage in 1905.
Wheat	22,934	11,901
Oats	15,211	18,700
Barley	2,631	7,500
Rye	6,024	6,495
Clover Seed	1,670	3,166
Hay	27,462	33,836

The dairy interests of the county are represented by 50 cheese factories and 4 creameries. There is very little unimproved land capable of being made productive. The range of prices for improved farm lands is from \$50 to \$100 per acre, with the average price about \$60 per acre. Kewaunee is the county seat. The population of the political divisions of the county for 1905 is given on the opposite page.

ALGOMA.

Algoma, Kewaunee Co. Population, 2,008. An incorporated city on the A. & W. Ry., and on Lake Michigan, in the northeastern part of the county, 10 miles north of Kewaunee, the county seat, 26 miles south of Sturgeon Bay, 31 miles from Green Bay, 160 miles from Milwaukee and 240 miles from Chicago. United States Express. Telegraph and telephone. Fair freight facilities and passenger service, owing to water competition.

The city is supplied with municipal water works, is lighted by electricity, has a bank, 2 drug stores, 8 groceries, 2 hardware, 3 dry goods and 2 general merchandise stores, 2 laundries 5 hotels, good public schools employing 8 teachers, churches of the leading religious denominations, 3 physicians and 2 lawyers. Has a fly net factory, lace works, veneer factory, planing mill,

cheese box factory, furniture factory, wood plumbing company and canning factory. The city owns the water and light plant and operates it at a profit to the city. A weekly newspaper is published.

KEWAUNEE COUNTY.

TOWNS, CITIES AND VILLAGES.	Families.	AGGREGATE POPULATION.			COLOR.			Ex-soldiers and sailors.	Militia.
		Male.	Female.	Total.	White.	Colored.	Indians.		
Ahnapee	223	625	535	1,160	1,160	.....	.....	3	229
Algoma, city	426	1,027	981	2,008	2,008	.....	.....	19	430
Carlton	279	733	653	1,386	1,385	1	.....	5	253
Casco	229	623	574	1,197	1,197	.....	.....	1	208
Franklin	281	781	685	1,466	1,466	.....	.....	1	223
Kewaunee, city	388	883	836	1,719	1,718	*1	.....	11	304
Lincoln	196	643	555	1,198	1,198	.....	.....	3	235
Luxemburg	301	935	834	1,769	1,768	.....	1	5	348
Montpeller	246	750	763	1,513	1,513	.....	.....	.....	183
Pierce	185	342	350	692	692	.....	.....	5	108
Red River	228	704	622	1,326	1,326	.....	.....	5	268
West Kewaunee	300	836	733	1,569	1,569	.....	.....	7	271
Total	3,232	8,882	8,121	17,003	17,000	2	1	65	3,114

*1 Chinaman.

There is a good opening for another furniture factory. There is an idle factory here that formerly manufactured chamber suits. The plant can be bought at a very reasonable price. Steam power is used for manufacturing purposes. Coal and wood are used for fuel. Coal is shipped in by boat and wood is plenty in the vicinity. There is plenty of help to be had in the city. Apples, strawberries, vegetables, fish, peas and beans can be supplied for canning. Clay, sand, timber and building stone are the natural products.

The surrounding country is good for farming and seven-eighths of the land suitable for crop raising is improved. 75 per cent of the land is level and covered with a good soil.

CASCO.

Casco, Kewaunee Co. Population, 300. Not incorporated. Situated on the Ahnapee & Western Ry., in the north central part of the county, 15 miles northwest of Kewaunee, the county seat, and 25 miles from Green Bay and 32 miles from Sturgeon Bay. United States Express. Telegraph and telephone. Shipping facilities and passenger service fair. Railway and water routes in competition.

The village is supplied with a bank, 2 grocery stores, a hardware store, 1 dry goods store, graded school employing

2 teachers, Catholic church, 1 physician, blacksmith shop, meat markets, foundry and saw mill.

Steam power is used here for manufacturing purposes. Wood is used for fuel obtained from the adjoining country. Fruit and vegetables are the only raw materials for canning; clay, sand, stone, peat and timber are the natural products. A limited amount of help could be secured. There is a good opening here for an elevator, lumber yard, drug store, planing mill, and a creamery.

The surrounding country is good for farming purposes and about 2-3 of the land suitable for crop raising is improved.

KEWAUNEE.

Kewaunee, Kewaunee Co. Population, 1,719. An incorporated city located at the mouth of the Kewaunee river on Lake Michigan, in Kewaunee county, of which it is the county seat, and on the K., G. B. & W. Ry., 37 miles from Green Bay, 166 miles from Milwaukee (by rail), and 251 miles from Chicago. United States Express. Telegraph and telephone. Connections are made with the Ann Arbor Ry. by lake ferries. Pere Marquette ferries connecting with P. M. Ry. at Ladington, Mich. Goodrich line of steamers for west shore traffic.

The city has a bank, 2 drug stores, 6 groceries, 3 hardware, 4 clothing and 2 general merchandise stores, a millinery store, good public schools employing 9 teachers, a parochial school, good churches, 5 hotels—capacity 125 guests, 5 physicians, 3 lawyers, a laundry, 5 farm implement dealers, furniture stores, canning factory, planing mills, flour mills, foundry and machine shop, brewery, agricultural implement factory, and saw mill machinery plant. Three weekly newspapers are published.

Coal for fuel is obtained from the east by boats. Such raw materials as fruit, vegetables and fish can be supplied for canning. Clay, sand and stone are the natural products. Help is very plentiful in the city. A good location for woodworking factory.

The surrounding country is a good agricultural section and about 80 per cent of the land suitable for crop raising is improved. The surface of the land is about 25 per cent rolling and the remainder is level and free from stone. Some sand along the lake shore and some swamps. Dairying is the principal occupation of the farmers, the county ranking third in dairy products in the state.

LA CROSSE COUNTY.

La Crosse county is located in the west central part of the state on the Mississippi river. The area is 475 square miles. The population in 1905 was 42,850. Nearly one-fourth of the population is foreign born, Germans and Norwegians greatly predominating. This country possesses some excellent agricultural lands. The total farm area in 1905 was 243,634 acres, of which 130,107 acres were improved. The value of the farms in 1905, including improvements was \$8,159,943, as compared with a valuation of \$4,668,618 in 1890. The surface of the county in the southern part is very uneven, consisting of high valley ridge land intersected in all directions by deep ravines and valleys, often bordered with precipitous cliffs, the elevation of the ridges above the valleys often being several hundred feet. The soil of the southern half of the county commencing several miles south of La Crosse river is a light clayey loam varying to prairie loams of a light and open nature and easily worked. The forest growth of this region is chiefly maple, elm, basswood, oak and ash. In the northern half of the county the ridges are not so steep and high and the intervening valleys are much wider. The soil is a sandy loam, similar to the soil of Trempealeau and Jackson counties. It is an excellent potato and small fruit soil, but on account of its open texture and small water capacity, is not so well adapted to hay or grain, and in the line of animal industry is better suited to sheep and hogs than to dairying. Along the Black, Mississippi and La Crosse rivers the soil is generally sandy and supporting a growth of small black oak. Along the La Crosse river and its tributaries occur occasional areas of humus soils composed mainly of muck and peat. The leading crops and the acreage devoted to each in 1890 and 1905 were as follows:

	Acreage in 1890.	Acreage in 1905.
Barley	2,414	7,226
Corn	19,558	17,648
Hay	28,900	27,480
Oats	24,040	30,290
Rye	5,419	3,474
Wheat	11,194	3,408

There are 6 cheese factories, 6 creameries and 2 skimming stations in the county. There are no large areas of unimproved land which can be made tillable as nearly all of the unimproved land in the county consists of small tracts in connection with the improved farms. Such unimproved land varies in price from \$15. to \$35. per acre. Improved farm lands range in price from \$40. to \$100. per acre. Marsh and bottom timber lands can be purchased for a few dollars per acre. La Crosse is the county seat. The population of the various political divisions in 1905 was as follows:

LA CROSSE COUNTY.

TOWNS, CITIES AND VILLAGES.	Families.	AGGREGATE POPULATION.			COLOR.			Ex-soldiers and sailors.	Militia.
		Male.	Female.	Total.	White.	Colored.	Indians.		
Bangor	124	376	319	695	695	.....	.....	1	156
Bangor, village	198	322	373	695	695	.....	.....	3	101
Barre	112	278	265	541	541	.....	.....	1	117
Burns	222	569	484	1,053	1,053	.....	.....	3	192
Campbell	210	504	430	934	934	.....	.....	3	173
Farmington	348	953	945	1,898	1,896	2	.....	8	353
Greenfield	128	380	318	698	698	.....	.....	1	153
Hamilton	252	677	579	1,256	1,255	1	.....	3	261
West Salem, village...	246	413	455	868	868	.....	.....	12	171
Holland	220	593	499	1,092	1,092	.....	.....	3	197
La Crosse, city:									
ward 1.....	371	755	793	1,548	1,548	.....	.....	6	334
ward 2.....	260	678	590	1,268	1,264	4	.....	7	326
ward 3.....	365	722	779	1,501	1,501	.....	.....	8	270
ward 4.....	334	636	764	1,400	1,393	7	.....	20	220
ward 5.....	265	570	573	1,143	1,137	6	.....	17	201
ward 6.....	232	548	701	1,249	1,249	.....	.....	25	198
ward 7.....	327	679	769	1,448	1,448	.....	.....	6	230
ward 8.....	501	1,166	1,239	2,405	2,405	.....	.....	7	402
ward 9.....	320	755	756	1,511	1,511	.....	.....	12	305
ward 10.....	359	781	717	1,498	1,498	.....	.....	11	235
ward 11.....	276	648	716	1,364	1,364	.....	.....	1	223
ward 12.....	219	596	459	1,055	1,040	15	.....	5	235
ward 13.....	265	568	566	1,134	1,134	.....	.....	8	196
ward 14.....	323	676	851	1,027	1,527	.....	.....	12	208
ward 15.....	306	741	716	1,457	1,449	8	.....	7	278
ward 16.....	176	386	452	838	838	.....	.....	8	114
ward 17.....	341	810	1,227	2,037	2,037	.....	.....	6	250
ward 18.....	418	965	969	1,934	1,934	.....	.....	6	331
ward 19.....	254	566	589	1,155	1,155	.....	.....	10	179
ward 20.....	198	465	417	882	882	.....	.....	11	180
ward 21.....	141	377	347	724	719	5	.....	3	98
Total, city.....	29,078								
Onalaska	198	517	479	996	996	.....	.....	8	193
Onalaska, city	269	536	570	1,106	1,104	2	.....	22	147
Shelby	191	653	497	1,150	1,150	.....	.....	6	209
Washington	139	439	351	790	790	.....	.....	1	182
Total	9,098	21,296	21,554	42,850	42,800	50	.....	272	7,658

BANGOR.

Bangor, La Crosse Co. An incorporated village of 695 inhabitants. Located on both, the C., M. & St. P. and the C. & N. W. Rys., 247 miles from Chicago, 182 miles from Milwaukee and 16 miles from La Crosse. Telegraph and telephone. American and United States Express. First class freight and passenger facilities.

The village is supplied with plenty of water, an electric light plant, 1 bank, 2 drug stores, 3 general stores, 1 racket store, a restaurant, 2 blacksmith shops, barber shop, meat market, 2 hotels, clothing store, 2 lumber yards, brewery, 2 elevators, 3 physicians, 1 lawyer, and a high school employing 8 teachers. La Crosse river flows through the village. The streets are well kept, and well supplied with shade trees, and there is a public park. Such raw materials as fruit, vegetables, clay, sand and stone can be supplied. A canning, shoe or implement factory is best suited for the place, and plenty of help can be procured.

The soil of the surrounding country is very fertile, all the land suitable for farming purposes is improved.

LA CROSSE.

La Crosse, La Crosse Co. Population, 29,078. Situated in western Wisconsin at the confluence of the La Crosse and Black rivers with the Mississippi. It is 197 miles from Milwaukee and 125 miles from St. Paul. The city is situated on the line of the G. B. & W. Ry., the C. M. & St. P. Ry., the C. & N. W. Ry., and the C. B. & Q. Ry., and the L. & S. E. Ry. First class facilities for receipt and shipment of freight. Excellent passenger service. An extensive commerce is conducted on the Mississippi river during the season of navigation. Telegraph and telephone. Street railway. Adams. American and United States Express.

La Crosse, once the seat of a most extensive lumbering and saw-mill industry, has just emerged from the stagnation resulting from the passing of the forests. The capital formerly invested in lumbering has not left the city with the developing of lumbering in the south and the west, but has been invested in more permanent and more diversified manufacturing. In addition to its saw-mills, which are still an important factor in the industrial position of the city, there are large plants for the manufacture of agricultural implements, carriages and wagons, confectionery goods, clothing, cigars, sash, doors, etc., malt liquors, machinery, boilers, stoves, rubber goods, flour, knit goods and pearl buttons. The five large breweries afford a market for 150,000 bushels of barley and 100,000 pounds of hops annually. There are a total of 150 manufacturing establishments in the city, with a capitalization of \$7,000,000, employing 391 salaried officials and clerks, and an average of 3,000 wage-earners. The annual product is valued at nearly \$9,000,000. La Crosse has an extensive

wholesale and jobbing trade, having for its market eastern Wisconsin, southern Minnesota, northern Iowa, and the states to the west. The city has 6 banks, 4 daily and 6 weekly newspapers. The city owns its waterworks system which is complete in every respect. The streets are uniformly well paved, the business streets being paved with brick. The street railway with fifteen miles of track reaches all portions of the city. The city is lighted by electricity and gas. The Yaryan system of hot water heating has been installed recently. There is a well equipped paid fire department. While every form of industry is welcomed, the city owing to its proximity to the hardwoods of this state, offers the best inducements for the manufacture of agricultural implements and vehicles.

The surrounding country which is a well settled agricultural district could furnish a large additional labor force. Homes can be purchased very reasonably. Every inducement is offered for the location of new commercial and manufacturing establishments by the La Crosse Board of Trade, which for over a generation has been industriously active in the upbuilding of the city.

ONALASKA.

Onalaska, La Crosse Co. An incorporated city having a population of 1,106. Located on the C., B. & Q., and the C. & N. W. Rys., 261 miles from Chicago, 214 miles from Milwaukee and 5 miles from La Crosse. An electric railroad running to La Crosse. United States, American and Adams Express. Telegraph and telephone. Excellent passenger facilities.

The city is supplied with an electric light plant, bank, drug store, 3 groceries, hardware, 3 dry goods stores, 3 meat markets, 3 blacksmith shops, 2 confectionery stores, 2 shoe shops, bicycle and repair shop, 2 patent medicine establishments, woolen mills, a pickle factory, 3 hotels, 3 boarding houses, 1 physician and a high school employing 9 teachers. A first-class hotel is needed.

The city has an undeveloped water power. Coal shipped from Illinois is used for fuel. Such raw materials as fruit, vegetables, fish from the Mississippi river, clay, sand, timber and stone can be supplied, and plenty of help secured. A beet sugar factory, bottling works or any establishment utilizing the raw materials that can be supplied here are best suited for the place.

Excellent farming land surrounds the city. Soil is very fertile and all improved.

WEST SALEM.

West Salem, La Crosse Co. An incorporated village of 868 inhabitants. Located on both the C. & N. W. and the C., M. & St. P. Rys., 186 miles from Milwaukee, 252 miles from Chicago and 12 miles from La Crosse. Excellent freight and passenger facilities. United States and American Express. Telegraph and telephone.

The village has an electric light plant, 2 banks, drug store, 4 groceries, 2 hardwares, 2 general stores, 3 lumber yards, cement walk establishment, 2 physicians, a high school employing 7 teachers, 3 hotels, and 2 boarding houses. A first-class hotel is needed.

The streets are level and in good condition with an abundance of shade trees. About one mile from the village is a one thousand-horse water power that can be very easily developed. Wood and coal are used as fuel, the latter being shipped in from Illinois. Such raw materials as fruit, vegetables, sand, lime stone, clay and hardwood can be supplied and plenty of help procured. A canning or furniture factory, woolen mill or a brick yard is best suited for the place.

The soil surrounding the village is excellent for all kinds of farming and the land is well improved.

LAFAYETTE COUNTY.

La Fayette County is situated in the south-western part of the state. The area is 634 square miles. The population in 1905 was 20,277. It is one of the oldest counties in the state and consequently the present population is largely native born. Only about one-seventh of the population is foreign born, consisting chiefly of Norwegians, Germans and English. The early settlement also resulted in the occupation and development of available farming lands at an early date. In 1905 the total acreage devoted to agricultural purposes was 372,325 acres, of which 321,604 acres were improved. In 1890 the total farm area and the amount of improved lands were 355,172 acres and 278,119 acres respectively. While the acreage increased but a comparatively small amount, the valuation of the farms including improvements, increased from \$11,934,750 in 1890 to \$20,076,389 in 1905, or nearly 70%. The land of the county consists of alternating flat topped ridges and river valleys. The Pecatonica river with its tributaries, breaks the land up into a series of ridges and hills which gives the surface a rather hilly topography. The soil of the county is uniformly excellent. It consists almost

entirely of clayey loams of the lighter and medium varieties interspersed with large irregular tracts of prairie loams. The excellent drainage furnished by the numerous small streams makes the county singularly free from swamps and marshes. The lighter varieties of loam are found along the river valleys and the heavier on the tops of the ridges. The county contains no gravel or foreign boulders such as are frequent in the eastern part of the state. The leading crops and the acreage devoted to each in 1890 and 1905 were as follows:

	Acreage in 1890.	Acreage in 1905.
Barley	2,344	3,957
Corn	60,031	64,133
Hay	50,412	61,493
Oats	61,906	44,241
Rye	2,601	766
Wheat	3,010	379

Lafayette County is situated in the richest dairying district in the state, and one of the richest in the United States. In 1905 there were in the county 86 cheese factories, 19 creameries and a skimming station. The county is also located in one of the wealthiest lead and zinc mining districts, and mining is rapidly becoming a leading industry. There is practically no unimproved land remaining which can be made tillable except small tracts owned in connection with improved farms. The range of prices for improved lands is from \$50 to \$150 per acre. Darlington is the county seat. The population of the local political divisions of the county for 1905 is given on the opposite page.

BELMONT.

Belmont, Lafayette Co. Population 513. An incorporated village in the northwestern part of the county, on the Platteville branch of the C. M. & St. P. Ry., 16 miles northwest of Darlington, the county seat, 72 miles from Platteville, 86 miles from Madison, 152 miles from Milwaukee and 181 miles from Chicago. United States Express. Shipping facilities and passenger service fair.

The village is supplied with a telephone system, a bank, drug store, 2 hardware and 3 general merchandise stores, a hotel, 2 boarding houses, 2 physicians, high and graded schools employing 5 teachers, Lutheran, Methodist and Episcopal churches, harness shop, 2 blacksmith shops, a creamery and a weekly newspaper.

LA FAYETTE COUNTY.

TOWNS, CITIES AND VILLAGES.	Families.	AGGREGATE POPULATION.			COLOR.			Ex-soldiers and sailors.	Militia.
		Male.	Female.	Total.	White.	Colored.	Indians.		
Argyle	163	481	418	899	899	.....	.....	4	199
Argyle, village	154	280	292	572	572	.....	.....	11	98
Belmont	135	362	304	666	636	.....	.....	2	137
Belmont, village	134	231	282	513	513	.....	.....	7	86
Benton	174	482	421	903	903	.....	.....	2	223
Benton, village	114	241	259	500	500	.....	.....	6	91
Blanchard	88	243	226	469	469	.....	.....	2	86
Blanchardville, village	146	338	304	642	642	.....	.....	8	138
Darlington	226	586	524	1,110	1,110	.....	.....	9	234
Darlington, city:									
ward 1.....	234	437	460	897	896	*1	.....	.....	.....
ward 2.....	262	418	528	946	946	.....	.....	.....	.....
Total, city...1,843								30	316
Elk Grove	136	400	349	749	749	.....	.....	3	164
Fayette	172	438	405	843	843	.....	.....	4	157
Gratiot	238	632	538	1,170	1,170	.....	.....	5	254
Gratiot, village	87	178	179	357	357	.....	.....	7	70
Kendall	121	342	307	649	649	.....	.....	2	127
Lamont	110	297	245	542	542	.....	.....	8	106
Monticello	62	153	124	277	277	.....	.....	2	63
New Diggings	206	451	420	871	871	.....	.....	13	188
Seymour	132	380	346	726	726	.....	.....	.....	111
Shullsburg	144	384	360	744	744	.....	.....	4	171
Shullsburg, city:									
ward 1.....	128	199	268	467	466	1	.....	.....	.....
ward 2.....	164	321	365	686	686	.....	.....	.....	.....
Total, city...1,153								14	27
Wayne	245	598	575	1,173	1,173	.....	.....	18	229
White Oak Springs	63	165	146	311	311	.....	.....	1	83
Willow Springs	204	486	425	911	911	.....	.....	2	226
Wiota	336	866	818	1,684	1,684	.....	.....	13	354
Total	4,378	10,389	9,888	20,277	20,275	2	.....	177	4,120

*1 Chinaman.

Steam power is used here and wood is used for fuel. Vegetables can be supplied for canning. There is plenty of clay, stone, jack and lead in the vicinity. No help can be secured here. A canning factory is needed.

The adjoining country is good for farming and about 75 per cent of the land is improved. Three-fourths of the country is level and free from stone, and the soil is good.

BENTON.

Benton, Lafayette Co. Population, 500. An incorporated village on the C. & N. W. Ry., in the southwestern part of the county, 20 miles southwest of Darlington, the county seat, 16 miles from Galena, Ill., 7 miles from Platteville, 95 miles from Madison, 177 miles from Milwaukee and 183 miles from Chicago. American Express. Telegraph and telephone. Fair shipping facilities and passenger service.

The village is in the midst of a good mining country and is supplied with an electric light plant, has a bank, a drug store, grocery, 2 hardware and 3 general merchandise stores, a clothing store, 2 hotels, 2 boarding houses, good public schools employing 6 teachers, Catholic, Methodist, Episcopal and Primitive Methodist churches, a physician, 2 blacksmith shops, wagon shop, harness maker, flour mill 1 mile east, and a creamery. A weekly newspaper is published. A first class hotel is needed.

Steam power is used. Coal is used for fuel obtained from Galena and Chicago. Vegetables can be supplied for canning and clay, stone, zinc and lead are the natural products. Help is scarce here owing to the demand for help in the mines.

The surrounding country is good for farming and about 2-3 of all the land is improved. Soil is a black loam.

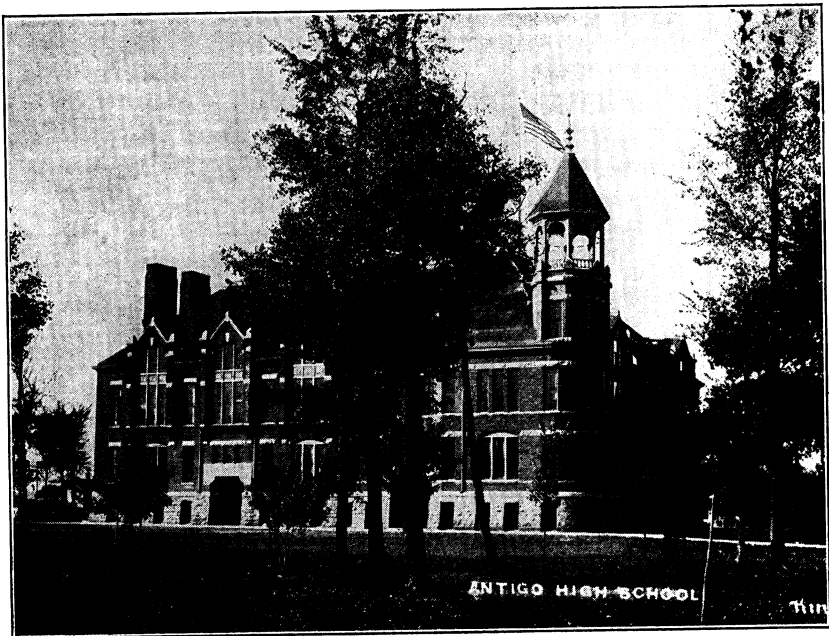
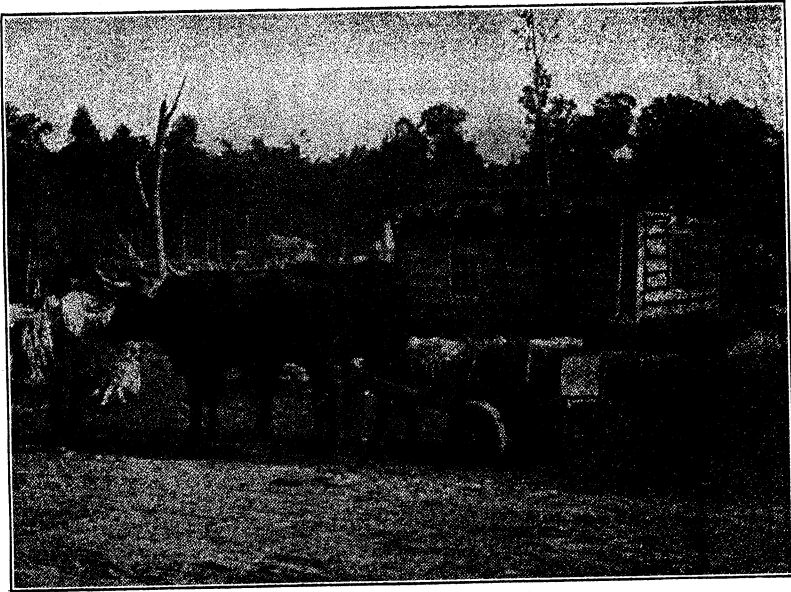
BLANCHARDSVILLE.

Blanchardville, Lafayette Co. Population, 642. An incorporated village in the northwestern corner of the county, on the Dodgeville branch of the Illinois Central Ry., and on the Pecatonica river, 20 miles northeast of Darlington, the county seat, 67 miles from Madison, 149 miles from Milwaukee and 160 miles from Chicago. American Express. Telephone and telegraph. Fair shipping facilities and passenger service.

The village is lighted by electricity, has a bank, drug store, 2 hardware stores, 6 general merchandise stores, 2 hotels, 3 physicians, a lawyer, and several churches; has good public schools employing 6 teachers. There is a good opening here for a laundry.

Wood for fuel is obtained from the adjacent country and coal from Illinois. Small fruit and vegetables can be supplied for canning. Brick clay can also be supplied. A brick yard is already established.

Help is scarce in the vicinity. There is some good farm land in the adjacent country and about $\frac{1}{2}$ of the land suitable for crop raising is improved. The country is hilly and stoney but has a good clay soil. The mineral deposits are not developed.



FIRST AND LAST SCHOOL BUILDINGS ERECTED AT ANTIGO, WIS.
THE RESULT OF 25 YEARS GROWTH.

DARLINGTON.

Darlington, Lafayette Co. Population, 1,843. An incorporated city on the C., M. & St. P. Ry., and on the Pecatonica river in the central part of Lafayette county, of which it is the judicial seat, 60 miles from Madison, 67 miles from Janesville, 138 miles from Milwaukee and 166 miles from Chicago. United States Express. Telegraph and telephone. Good shipping facilities and passenger service.

The city has a good system of water works, electric light plant, 2 banks, 3 drug stores, 3 hardware stores, 3 general merchandise stores, 5 grocery stores, 2 furniture stores, 2 shoe stores, 2 jewelry stores, 3 hotels, 2 boarding houses, an elegant high and graded school system employing 13 teachers, 5 churches, 5 physicians, 7 lawyers, 4 dentists, laundry, harness shop, 4 blacksmiths, 2 meat markets, cigar factory, cheese factory, feed mill and 2 grain elevators. There are 2 fine school buildings, a new \$125,000 court house, a \$10,000 free library building, paved streets, many nice shade trees, a public park and soldiers monument. Three weekly newspapers are published. A first-class hotel is needed. This is a good location for a milk condensing factory.

There is an undeveloped water power. Coal for fuel is obtained at Milwaukee. A canning factory can be supplied with fruit and vegetables. Clay, sand, stone, zinc and lead are the natural products. Plenty of help can be secured.

The city is surrounded by a fine farming country and the land is all utilized. About 50 per cent of the land is hilly but is all used for pasture. The soil is a black loam with a clayey subsoil. The farms in this section are not surpassed in the state for dairying and stockraising. Cheese manufacturing is the chief industry.

GRATIOT.

Gratiot, Lafayette Co. Population, 357. An incorporated village on the C., M. & St. P. Ry. in Gratiot township, 10 miles southeast of Darlington, 60 miles from Madison, 128 miles from Milwaukee and 156 miles from Chicago. United States Express. Telephone and telegraph. Good shipping facilities and passenger service.

The Pecatonica river furnishes considerable water power at this place. The village has a bank, drug store, 2 hardware and 4 general merchandise stores, jewelry store, furniture store, 2 good hotels, 2 boarding houses, graded schools employing 4 teachers, Catholic and Methodist churches, a physician, lumber yard, blacksmith shop, meat market, 2 feed mills and a creamery.

Water power can be utilized for manufacturing purposes. Wood for fuel can be obtained in the vicinity and coal from

Chicago. Such raw materials as fruit and vegetables can be supplied for canning. The natural products are clay, stone, timber, lead and zinc. There is plenty of help in the village and surrounding country. There is an opening here for a canning factory or woolen mills.

The adjacent land is suitable for farming and is all improved. About 50 per cent of the country is level.

SHULLSBURG.

Shullsburg, Lafayette Co. Population, 1,153. An incorporated city located on the C., M. & St. P. Ry. in the southeasterly part of the county, 12 miles west of Gratiot Junction, 12 miles southwest of Darlington. 60 miles from Madison, 141 miles from Milwaukee and 168 miles from Chicago. United States Express. Telephone and telegraph. Shipping facilities and passenger service fair.

The city is supplied with a bank, 2 drug stores, 2 hardwares, 4 groceries and 5 general merchandise stores, a clothing store, good high and graded schools employing 7 teachers, Catholic, Congregational, Methodist and Lutheran churches, 2 hotels, a boarding house, 3 physicians, 3 lawyers, furniture store, blacksmith shop, harness shop, cigar factory, brewery, cheese factory, creamery, small mining companies, etc. A weekly newspaper is published. The city owns and operates the water works with 10,000 feet of mains.

Steam power is used. Wood for fuel is obtained in the vicinity and coal is shipped from the east. The only raw materials for canning are vegetables. The principal natural products are zinc and lead ore and a number of mines are being developed. A smelting plant would do well here. Help can be secured.

The surrounding country is well adapted for stock raising and farming and quantities of cattle, hogs, grain and butter are shipped.

SOUTH WAYNE.

South Wayne, Lafayette Co. Population, about 300. An unincorporated village on the C., M. & St. P. Ry. in Wayne township, 18 miles southeast of Darlington, the county seat, 50 miles from Madison, 47 miles from Janesville, 117 miles from Milwaukee and 146 miles from Chicago. United States Express. Telephone and telegraph. Good shipping facilities and passenger service.

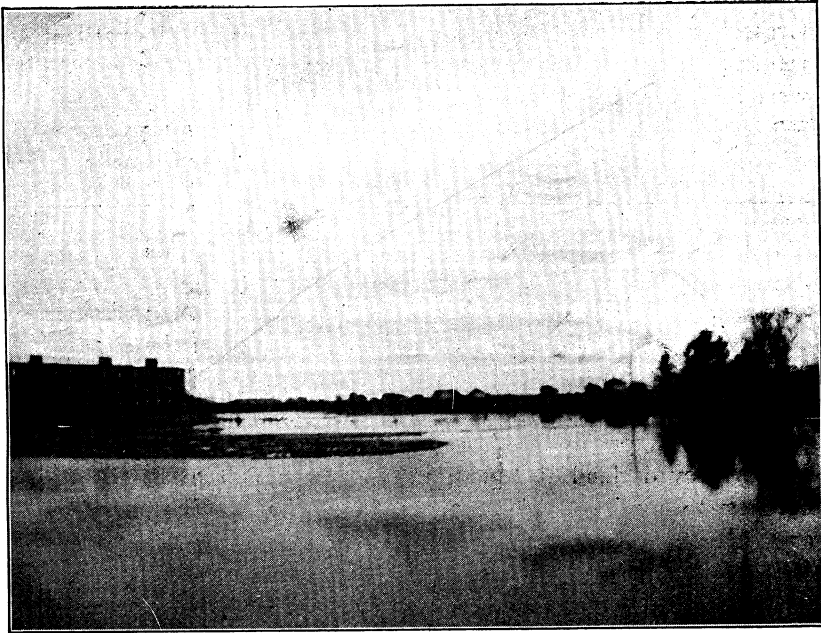
The village is supplied with a bank, a drug store, 2 hardware and 4 general merchandise stores, furniture store, a hotel, graded public school employing 3 teachers, 2 physicians, Baptist, Catholic, Methodist and Episcopal churches, 2 blacksmith shops, meat markets, feed mill and a creamery.

Coal and wood are the fuels used. Wood can be obtained from the adjacent country and coal from the east. Vegetables can be supplied for canning and clay, sand and stone are the natural products. A limited amount of help can be secured in the vicinity. A hotel and canning factory are needed.

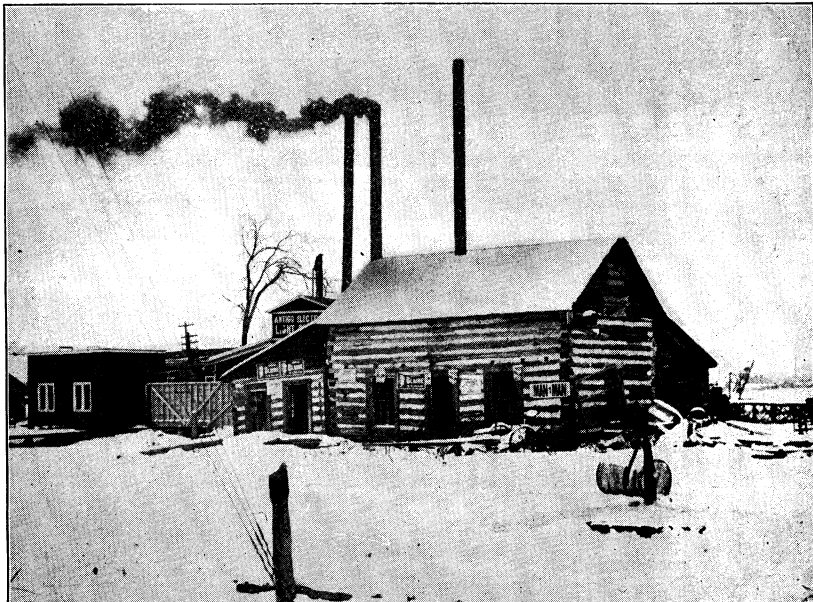
About 75 per cent of the land surrounding the village suitable for crop raising is improved. Dairying is the chief industry.

LANGLADE COUNTY.

Langlade county is located in the northeastern part of the state. The area is 855 square miles. The population in 1905 was 15,738, a gain of 3,185 over the census of 1900. Over one-sixth of the population is foreign born, nearly one-half of which are Germans. There are also large numbers of Bohemian, Canadian and Polish settlers. The total farm area in 1905 was only 113,175 acres, of which but 38,578 acres were improved. In 1890 the area of all the farms in the county was 77,831 acres, of which 13,632 acres were improved. The value of the farms and improvements in 1905 was \$3,465,038, as compared with only \$1,050,191 in 1890, a gain of \$2,414,847 or nearly 225% in 15 years. There are large tracts of land in this county awaiting the settler, the total present farm acreage being less than 30% of the area of the county. The topography of the county is more or less rolling and hilly. In the northern part the surface is characterized by belts of ridges and billowy hills, and associated with basin-like depressions, swamps and numerous small lakes or ponds. These hills and ridges generally have steep slopes and often rise to a considerable height above the surrounding land. In the south-western part of the county the land is quite level and presents a prairie-like plain. There are numerous irregular areas of swampy soil. The soil is mainly a clayey and gravelly loam of the lighter varieties, with an increasing number of boulders toward the north. The subsoil consists of gravel and sand. Wherever farms have been cleared the soil has shown itself capable of producing good crops. Its productive quality is attested by the numerous thriving farms established within the last decade. It maintains with ease an excellent dairy and stock industry.



SCENE IN THE CITY OF ANTIGO, WIS. VENEER SEATING PLANT IN THE DISTANCE.



FIRST HOUSE BUILT IN ANTIGO, COUNTY SEAT, TWENTY-FIVE YEARS AGO IN SOLID WILDERNESS.

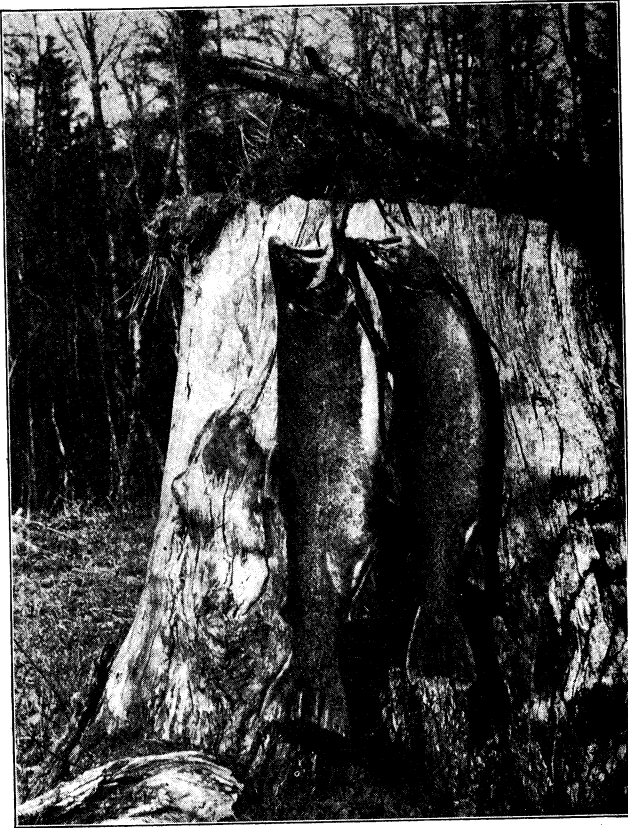
Grasses, clover, potatoes and the smaller crops yield excellent returns. The chief crops and their acreage in 1890 and 1905 were as follows:

	Acreage in 1890.	Acreage in 1905.
Wheat	43	941
Oats	2,345	8,461
Barley	76	1,189
Rye	232	294
Hay	8,650	16,056

There are 11 cheese factories and 3 creameries in the county. The standing hardwood, elm, maple, basswood, oak and hemlock show a dense growth. The pine has all been cut. The price of unimproved land ranges from \$10 to \$30 per acre. For improved land the price ranges from \$25 to \$100, according to quality and nearness to markets. The marshes are practically worthless for farm purposes. Antigo is the county seat and largest city. The following table shows the population of the cities, towns and villages of the county in 1905:

LANGLADE COUNTY.

TOWNS, CITIES AND VILLAGES.	Families.	AGGREGATE POPU- LATION,			COLOR.			Ex-soldiers and sailors.	Militia.
		Male.	Female.	Total.	White.	Colored.	Indians.		
Ackley	147	434	355	789	789	.....	.....	2	154
Ainsworth	31	71	68	139	89	.....	50	.....	23
Antigo	232	699	594	1,293	1,293	.....	.....	10	210
Antigo, city:									
ward 1.....	170	381	397	778	778	.....	.....	.....	.....
ward 2.....	198	471	478	949	948	.....	1	.....	.....
ward 3.....	195	523	488	1,011	1,011	.....	.....	.....	.....
ward 4.....	289	762	732	1,494	1,494	.....	.....	.....	.....
ward 5.....	181	471	471	942	939	*3	.....	.....	.....
ward 6.....	210	760	729	1,489	1,489	.....	.....	.....	.....
Total, city...6,663								52	1,322
Elcho	94	240	202	442	441	1	.....	2	90
Elton	40	90	75	165	165	.....	.....	1	27
Evergreen	61	202	146	348	348	.....	.....	1	92
Langlade	45	107	64	171	167	.....	4	2	48
Neva	184	538	438	976	976	.....	.....	1	227
Norwood	198	521	487	1,008	1,008	.....	.....	8	187
Peck	88	210	173	383	383	.....	.....	7	71
Polar	194	591	446	1,037	1,024	8	5	6	243
Price	122	308	262	570	570	.....	.....	1	113
Rolling	192	576	499	1,075	1,072	3	.....	3	190
Summit	48	149	102	251	251	.....	.....	2	49
Upham	39	146	90	236	236	.....	.....	.....	77
Vilas	42	93	99	192	192	.....	.....	4	33
Total	3,000	8,343	7,395	15,738	15,663	15	60	102	3,156



TROUT CAUGHT IN SPRING BROOK, ANTIGO, WISCONSIN.

ANTIGO.

Antigo, Langlade Co., is an incorporated city having a population of 6,663, located on the C. & N. W. Ry., 264 miles from Chicago, 179 miles from Milwaukee, and 163 miles from Ashland. Has telephone and telegraph communications. Good freight and passenger facilities. American Express.

Wood obtained from the saw mills and the surrounding forests is the principal fuel. Such raw materials as small fruit, vegetables, sand, clay, stone and an abundance of timber can be supplied, and Antigo is a suitable place for any industry that can utilize these. About 500 young persons can be procured here for canning factories in the summer, and 200 men can be secured for any kind of factory work the year round. A screen door factory was once established here but failed because profits were too small. The city is supplied with an electric light plant, 2 banks,

4 drug stores, 20 groceries, 5 hardwares, 1 department store, school system, 8 physicians, 13 lawyers, and a public park. Three weekly and one semi-weekly papers are published. The streets are wide and well kept.

The land surrounding Antigo is very fertile and most of it is well adapted for general farming and stock raising. About 20% of it is rough, 50% level and free from stone, 7% swampy and 3% sandy. The largest portion of tillable land is yet unimproved and can be purchased reasonably cheap.

BRYANT.

Bryant, Langlade Co., is an unincorporated village of about 300 people, situated on the C. & N.W. Ry., 273 miles from Chicago, 188 miles from Milwaukee. Freight and passenger service good. Has telephone and telegraph communications. American Express.

Such raw materials as timber, sand and stone can be supplied in abundance, and any industry such as a furniture factory or other woodworking establishment would be best suited for the place. Plenty of help for factory work can be secured. The village is supplied with 1 grocery store, 1 hardware, 1 dry goods store, 1 hotel, a boarding house, and 1 physician.

The land of the surrounding country is very fertile, one fourth of it being somewhat rolling, and the remainder is level, free from stone, sand or marshes. Only about one tenth of this land is as yet improved.

ELTON.

Elton, Langlade Co., is an unincorporated village of about 200 people, located at the end of a spur of the C. & N. W. Ry., running out from Bryant. Is 278 miles from Chicago, 192 miles from Milwaukee. Freight and passenger facilities not good. American Express.

An abundance of wood for fuel can be procured in the immediate vicinity. An abundance of timber as raw material can also be procured from the surrounding forests. A general store is all the industrial establishment the village is supplied with. There are numerous trout streams flowing through the surrounding country, and there are many beautiful lakes filled with other varieties of fresh water fish within reasonable distances of the village.

Part of the surrounding country is stony, some swampy, and a little rolling, but the soil is excellent for general farming purposes.



HUNTING SCENE IN LANGLADE COUNTY.



RESIDENCE OF CHIEF MAQUANTIGOSIPAWISHANSE, LANGLADE CO.

KOEPEINICK.

Koepenick, Langlade Co., is an unincorporated village of about 200 inhabitants, located on the C. & N. W. Ry., 279 miles from Chicago, 194 miles from Milwaukee and 146 miles from Ashland. Has good freight and passenger accommodations. Telegraph communications. American Express.

The village has a small undeveloped water power. Plenty of labor can be secured for any establishment the village will support; such raw materials as vegetables, clay, sand, stone and an abundance of timber can be supplied. A furniture factory is most suitable for this place. It is supplied with two groceries, two hardwares, two general stores, a saw mill, one hotel and one boarding house.

The land of the surrounding country is well adapted for farming purposes, but as yet there are only four farms located anywhere near the village. The soil is a clayey loam, very little of which is stony, sandy or swampy.

PHLOX.

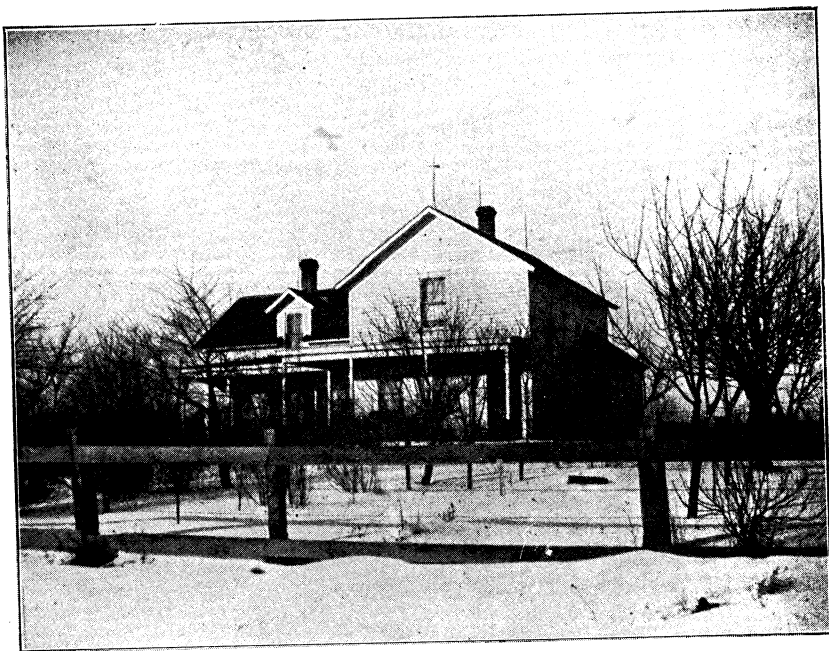
Phlox, Langlade Co., is an unincorporated village of about 200 inhabitants; situated 9 miles from the C. & N. W., and 4 miles from the Mattoon Ry. American Express.

This place can be made a summer resort. A grist mill and hub mill is best suited for the place. Clay, sand, timber and stone can be supplied. Two grocery stores, 2 general stores and 2 hotels are located here.

A good farming country surrounds the village, about three fourths of the land suitable for farming purposes being improved. The soil is fertile, level, free from stone and swamps.

LINCOLN COUNTY.

Lincoln county is located in the north-central part of the state. The area of this county is 885 square miles, with a population in 1905 of 19,125, a gain of 2,856 over 1900. Those of foreign birth number 5,322, of which number over one-half are Germans, Canadians and Scandinavians ranking next in order. The farm acreage in 1905 was 106,757, of which amount 24,841 acres were improved. The value of these farms in 1905 with improvements was \$2,074,388. In 1890 the farm acreage was 63,481 valued at \$677,075. Covering the larger part of the three northern townships, the soil is very sandy and gravelly, containing a variable though small amount of clay. The sur-



A NORTHERN WISCONSIN HOME.

face is uneven with bouldery drift hills alternating rapidly with level stretches of sandy plains. The lower lands have uniformly sandy soils, while the hilly lands are bouldery and gravely mixed with clay. There are numerous swamps and lakes. The forest growth of this region was Norway and white pine. Owing to its coarse and porous nature this soil is not very fertile and is best adapted to light farming and grazing. From the northwest corner of the county down to the central part and touching the Wisconsin river the soil is a clay loam, with a gently sloping and rolling surface, with here and there broad level stretches. There are some swamps but no lakes in this district. A variable amount of boulders are scattered over the surface but not in sufficient numbers to greatly interfere with cultivation. The forest growth of this region is birch, maple elm and basswood. While but little of this soil is as yet under cultivation, where it has been cleared it has shown itself capable of producing good grain, grasses and corn and would support a large dairy and stock industry. South of this clay loam and reaching across the county and covering the larger part of it, the soil is a sandy loam. The surface is characterized by

belts of ridges and steep billowy hills with basin-like depressions, swamps and small lakes. Boulders of all sizes are present. The trees of this region are mainly birch, basswood and hemlock. This soil is better adapted to corn and potatoes than to grasses and clover. In the southeastern part of the county the soil is a loamy clay, with a rolling surface. It is generally free from boulders and is very durable and productive ranking among the richest in the state. The chief crops and their acreage in 1890 and 1905 were as follows:

	Acreage in 1890.	Acreage in 1905.
Wheat	352	287
Oats	1,706	4,215
Barley	22	553
Hay	4,627	13,709

There are 4 cheese factories and 3 creameries in the county. The price of unimproved clay lands ranges from \$8 to \$12 per acre; of timber lands, from \$10 to \$20 per acre, and of improved farm lands, from \$20 to \$60 per acre. There are still over 400,000 acres of land in this county open to settlement. Merrill is the county seat. The population of the cities, villages and towns in 1905 is shown on the opposite page.

HEAFFORD JUNCTION.

Heafford, Junction, Lincoln Co., is an unincorporated village located at the junction of the "Soo" and C. M. & St. P. railroads, 275 miles from Milwaukee, 179 miles from La Crosse and 196 miles from St. Paul. Has good freight and passenger facilities. U. S. express. Telephone and telegraph.

This village is located in the lake region of Wisconsin and is destined to become a most popular summer resort. Berries of all kinds grow in abundance. The soil is a sandy loam. But little of the land suitable for farming purposes is improved. There is a good opening at this place for a general store.

HEINEMAN.

Heineman, Lincoln Co., is an unincorporated village of about 200 people, located on the C. M. & St. P. Ry. Has good freight and passenger facilities. Telephone and telegraph. U. S. Express.

Any industry such as the manufacture of furniture, spindle handles, etc. is best suited for this place. About a 100-horse water power can be developed. Wood is the principal fuel

LINCOLN COUNTY.

TOWNS, CITIES AND VILLAGES.	Families.	AGGREGATE POPULATION.			COLOR.			Ex-soldiers and sailors.	Militia.
		Male.	Female.	Total.	White.	Colored.	Indians.		
Birch	95	281	194	475	474	1		3	85
Bradley	110	288	223	511	506		5	6	111
Corning	105	328	264	592	592				111
Harrison	91	308	203	511	511				170
King	37	78	72	150	150			3	29
Merrill	109	342	287	629	629			1	125
Merrill, city:									
ward 1.....	188	515	496	1,011	1,011				162
ward 2.....	139	343	313	656	656			9	211
ward 3.....	232	581	532	1,113	1,112	1		17	275
ward 4.....	427	1,059	1,001	2,060	2,060			10	372
ward 5.....	188	504	413	917	917			8	251
ward 6.....	324	938	807	1,745	1,745			4	333
ward 7.....	348	839	856	1,695	1,694	1			237
Total, city...9,197									
Pine River	199	643	543	1,186	1,186			4	204
Rock Falls	96	245	200	445	439		6		91
Russell	36	267	194	461	461			4	113
Scott	181	505	496	1,001	1,001			2	184
Schley	143	404	327	731	731				149
Somo	59	160	100	260	260				92
Tomahawk	55	236	114	350	350			3	151
Tomahawk, city:									
ward 1.....	73	321	143	464	464			2	185
ward 2.....	98	305	233	538	537	*1		1	169
ward 3.....	151	383	345	728	728			1	184
ward 4.....	187	472	424	896	896			1	176
Total, city...2,626									
Total	3,731	10,345	8,780	19,125	19,110	4	11	79	4,225

*1 Chinaman.

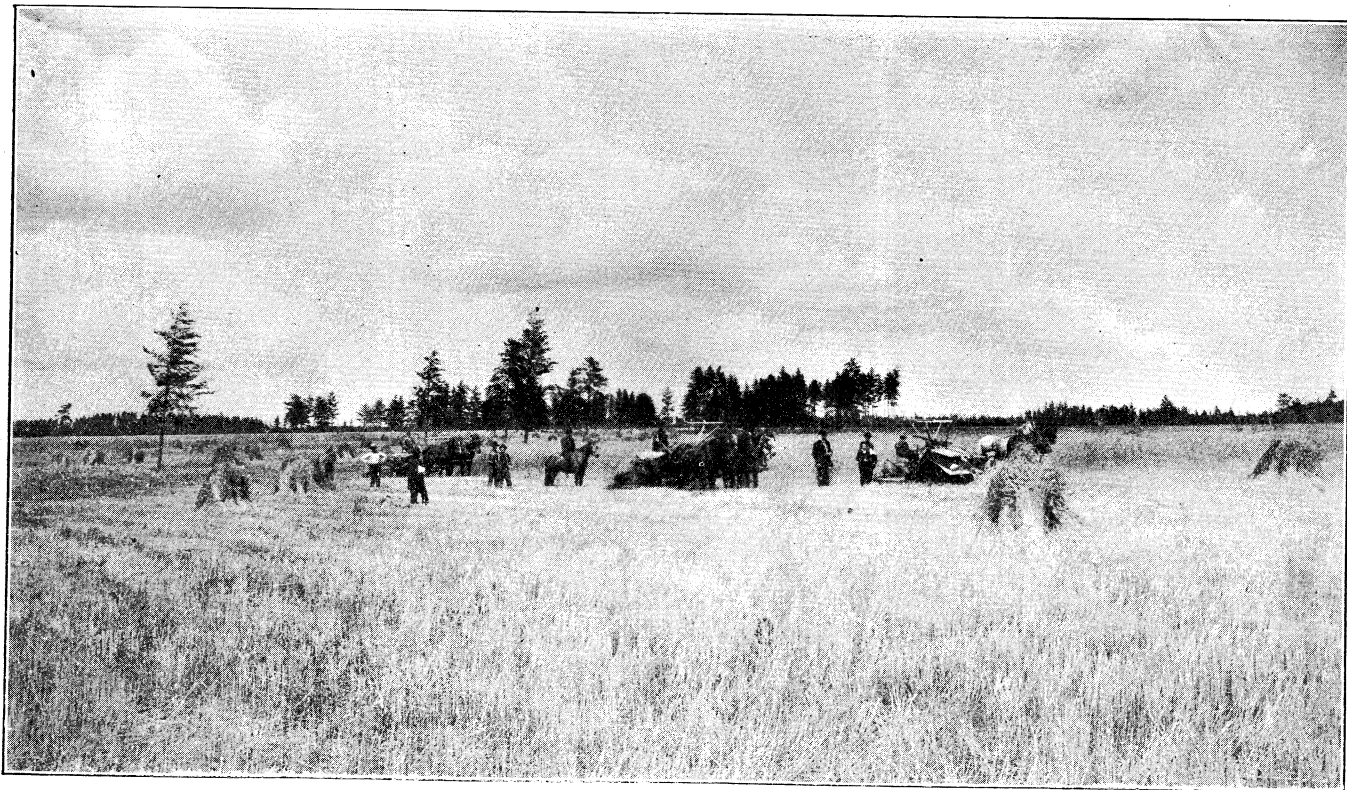
Such raw materials as small fruit, vegetables, clay, sand, stone, timber and iron can be supplied, and plenty of help procured. The village has 1 drug store, 1 grocery, 1 hardware, 2 general stores, one physician. The village is a summer resort town with natural parks, trout streams, lakes filled with other fresh water fish, with splendid hunting in the surrounding forests.

Only about one-tenth of the land surrounding this village suitable for farming purposes is improved. The soil is good but is somewhat stony and sandy.

MERRILL.

Merrill, Lincoln Co., is a city of 9,197 population, located on the C., M. & St. P. Ry., 247 miles from Milwaukee, 332 miles from Chicago and 151 miles to La Crosse. Has telephone and telegraph. U. S. Express. Good freight and passenger facilities.

Merrill is the third city in size in the north-eastern section of the state. Such raw materials as small fruit, vegetables, clay, sand, stone and timber can be supplied. Wood from the sur-



RIVERSIDE FARM NEAR TOMAHAWK.

rounding forests is the principal fuel. Plenty of laborers can be secured. A veneer plant, chair or other furniture factory, pail factory, and a paper mill are best suited for the place. The city is already supplied with an electric light plant, 3 banks, 7 drug stores, 20 groceries, 6 hardwares, 8 dry goods stores, 2 laundries, 4 hotels, 12 boarding houses, 6 saw mills, 2 sash, door and blind factories, 2 paper and pulp mills, 1 box factory, 1 pail factory, 1 tannery, 2 excelsior mills, 2 glove and mitten factories, a brewery, a foundry and machine shop, an excellent public school system, 4 weekly newspapers, 12 physicians, and 15 attorneys at law.

The city has fine macadamized, shady streets, cement sidewalks, first-class public buildings and can be made a very popular summer resort town. An electric railway is being constructed to connect this city with Wausau and Antigo.

About twenty per cent. of the lands of the surrounding country suitable for farming purposes are improved. Some of the land is rolling, a small portion swampy, some sandy and stony. The soil is a rich sandy loam and is excellent for general farming purposes.

TOMAHAWK.

Tomahawk, Lincoln Co., is a city of 2,629 inhabitants, located on the C. M. & St. P. Ry., the "Soo" Ry. and the Marinette, Tomahawk & Western Ry., which connects with the W. C. Is 268 miles from Milwaukee, 221 miles from Chicago and 192 miles to La Crosse. Has telephone and telegraph communications. Fairly good freight and passenger accommodations. U. S. and American Express.

A 6000 horse water power can be developed here. Wood for fuel is to be had from the surrounding country. Any kind of wood-working establishment is suitable for the place, and plenty of help can be secured. It is already supplied with an electric light plant, 2 banks, 3 drug stores, 9 groceries, 4 hardwares, 1 department store, 2 dry goods stores, 1 laundry, 2 hotels, several boarding houses, a splendid public school system employing 18 teachers, 4 physicians, 3 lawyers, several lumber establishments, a tannery, 2 printing offices and weekly newspapers, an excelsior mill, iron works, paper and pulp mill, a veneer and stave factory, and a city water works. There are many beautiful fresh water lakes near by and an ideal summer resort could be established.

Some of the best land in the state is to be had at a reasonable price near Tomahawk, only about one-tenth suitable for farming being improved.



LOGGING NEAR TOMAHAWK.

MANITOWOC COUNTY.

Manitowoc county is located in the east central part of the state on Lake Michigan. The area is 590 square miles. In 1905 the population of the county was 44,796, showing a gain of 2,535 over the census of 1900. One-fifth of the population is of foreign birth. Of this number nearly 60% are Germans. There are also large numbers of Bohemians and Poles. The county possesses an excellent soil for general agricultural purposes. The total farm area in 1905 was 350,854 acres, about 93% of the area of the county and embracing all the land which can be made tillable. Of this acreage 238,089 acres are improved. The total farm acreage and the amount of improved land in 1890 was 345,571 acres and 235,060 acres respectively. During the period from 1890 to 1905 the valuation of such lands, including improvements increased from \$13,330,660 to \$20,841,560. The surface of the county is somewhat diversified, being broken up into hills, ridges and prairies. The soil covering the larger part of the county is a heavy clayey loam derived from the red lacustrine clays. Stretching across the county from the north to the southwestern part is a belt of rich and fertile clayey loams of the medium and heavier varieties. This soil is well adapted to the growth of all farm products and supports with ease a large and growing dairy and stock raising industry. Along the lake shore and in the northeastern part of the county the soil is a light sandy loam. Throughout the county there occur occasional irregular deposits of humus soil composed largely of muck and peat. The principal crops of the county and the acreage devoted to each in 1890 and 1905 were as follows:

	Acreage in 1890.	Acreage in 1905.
Wheat	38,675	7,150
Oats	31,945	39,795
Barley	9,880	30,795
Rye	11,414	20,099
Clover seed	2,590	6,192
Hay	46,975	59,928

There are 81 cheese factories and 20 creameries in the county. One of the principal industries is the canning of peas of which an immense amount is grown by the farmers and disposed of at

remunerative prices. There is very little unimproved land which can be made tillable, such land being found mostly in small tracts owned in connection with improved lands. The price for such lands averages about \$35 per acre. The prices for improved lands ranges from \$75 to \$100 per acre, and in some instances even higher. Manitowoc is the county seat. The following table shows the population of the various cities, villages and towns in the county in 1905:

MANITOWOC COUNTY.

TOWNS, CITIES AND VILLAGES.	Families.	AGGREGATE POPULATION.			COLOR.			Ex-soldiers and sailors.	Militia.
		Male.	Female.	Total.	White.	Colord.	Indians.		
Cato	351	942	840	1,782	1,782	.....	6	324
Centerville	300	772	681	1,453	1,453	.....	18	282
Cooperstown	285	1,000	700	1,700	1,700	.....	8	482
Eaton	262	692	640	1,332	1,332	.....	8	190
Franklin	301	843	790	1,633	1,633	.....	1	317
Gibson	269	753	704	1,457	1,457	.....	11	279
Kossuth	361	1,025	881	1,906	1,906	.....	8	403
Liberty	266	771	699	1,470	1,470	.....	18	282
Manitowoc	171	396	404	800	800	.....	2	132
Manitowoc, city:									
ward 1.....	445	1,079	1,048	2,127	2,125	*2	.....	528
ward 2.....	308	631	719	1,350	1,343	7	.....	271
ward 3.....	615	1,326	1,422	2,748	2,748	.....	.....	547
ward 4.....	391	868	906	1,774	1,774	.....	.....	419
ward 5.....	363	827	805	1,632	1,632	.....	.....	346
ward 6.....	199	420	424	844	844	.....	.....	160
ward 7.....	392	1,186	1,072	2,258	2,258	.....	.....	346
Total, city.....	12,733	.....	.....	.....	.....	.....	55	.....
Manitowoc Rapids	363	907	913	1,820	1,820	.....	10	282
Maple Grove	212	647	532	1,179	1,179	.....	4	249
Meeme	263	819	743	1,562	1,562	.....	12	294
Mishicott	324	784	777	1,561	1,561	.....	17	282
Newton	327	894	847	1,741	1,741	.....	9	282
Rockland	228	705	598	1,303	1,303	.....	6	298
Reedsville, village	121	245	270	515	515	.....	3	85
Schleswig	276	728	687	1,415	1,415	.....	5	273
Kiel, village	272	577	553	1,130	1,130	.....	2	253
Two Creeks	107	324	283	607	607	.....	2	116
Two Rivers	205	572	523	1,095	1,095	.....	12	183
Two Rivers, city:									
ward 1.....	180	412	409	821	821	.....	4	170
ward 2.....	146	365	359	724	722	*2	2	163	
ward 3.....	188	438	461	899	899	.....	5	156
ward 4.....	270	611	559	1,210	1,210	.....	1	239
ward 5.....	194	468	480	948	948	.....	2	198
Total, city.....	4,602	.....	.....	.....	.....	.....	.....	.....
Total	8,955	23,027	21,769	44,796	44,785	11	231	8,831	

*2 Chinamen.

CATO.

Cato, Manitowoc Co., is an unincorporated village of about 125 people, located on the C. & N. W. Ry., 175 miles from Chicago, 90 miles from Milwaukee, 37 miles from Sheboygan and 11 miles from Manitowoc. Freight and passenger facilities good. American Express. Telegraph and telephone.

Coal and wood are the fuels used. Such raw materials as fruit, vegetables, peas, sugar beats, clay, and sand can be supplied, and any amount of help procured. A canning factory or brick yard is best suited for the place. The village is supplied with 1 hardware store, a dry goods store, creamery, cheese factory, meat market, box factory, 2 hotels, 2 boarding houses, 1 physician and a graded school employing 2 teachers.

The land of the surrounding country is practically all improved. The soil is suitable for general farming purposes.

KIEL.

Keil, Manitowoc Co., is an incorporated village having a population of 1,130 inhabitants, located on the C., M. & St. P. Ry., 152 miles from Chicago, 67 miles from Milwaukee and 45 miles from Manitowoc. Has telephone and telegraph. Freight and passenger facilities good. U. S. Express.

There is a small undeveloped water power located here. Coal is shipped from Milwaukee. Such raw materials as fruit, vegetables, sand, and gravel can be supplied, and plenty of help procured. A canning factory is most suited for the place. The village is supplied with an electric light plant, city water-works, a bank, 2 drug stores, 3 hardwares, 3 general stores, livery stables, 2 barber shops, lumber and coal yard, wood and wire company, cheese box factory, table factory, cold storage plant, 2 millinery stores, 3 meat markets, a grist mill, 2 grain elevators, 2 hotels, 2 boarding houses, 3 physicians, a newspaper and a public school employing 7 teachers. The streets of the village are well kept, being wide and provided with plenty of shade trees and cement walk. The buildings are all substantially built.

The country surrounding this village is level. The soil is good and well adapted for general farming purposes.

MANITOWOC.

Manitowoc, Manitowoc Co. Population, 12,733. Located in a rich agricultural section bordering on Lake Michigan, 77 miles from Milwaukee and 162 miles from Chicago. C. & N. W. Ry. and Wisconsin Central Ry. Electric line to Two Rivers. Two carferry systems. Seven lines of steamships. With the exception of Milwaukee, it has the best harbor on Lake Michigan. Telegraph and telephone. Street railway. Excellent water system. Electric light plant, gas plant. American and National Express companies.

Owing to the large number of carferries operating from this city, Manitowoc has been termed the "carferry city," the Pere

Marquette and the Ann Arbor railways each making it their western port. The former line has 6 large steamers in commission and the latter 4, each boat having a capacity of from 28 to 32 cars. Navigation is continued by these ferries during the entire year. There are daily boats from Manitowoc to the leading cities on Lake Michigan and the Erie and Lackawanna railways operate boats between this city and the east. Manitowoc is located at the narrowest part of the lake, thus offering the shortest route between the east and west. The city is also an important grain center, being the location of a large number of elevators. Large lake shipments of grain and flour are made to eastern ports with regular cargoes of coal. Its lake clearances in 1905 were 1,743 vessels with a net tonnage of 1,953,015 tons.

Manitowoc has made rapid strides as a manufacturing center. In 1905 there were 76 manufacturing establishments with an aggregate capitalization of \$5,019,861, employing 1,321 wage-earners and having an annual product valued at \$4,427,816, the latter amount being an increase of nearly 129% over the product for 1900. The chief industries are ship building, manufacturing of agricultural implements, malt, furniture, gloves, knit goods, aluminum products, tools and boxes. The pea-canning industry has grown to large proportions, and Manitowoc peas have gained a national reputation. This city is located in Wisconsin's richest barley district making it a center for the production of high grade malt, which is shipped to many of the largest breweries in the country.

Such raw materials as clay, sand, stone and timber are near at hand. Additional labor can be secured from the surrounding country. There are no unoccupied factories. The city has many advantages as a summer resort. The Manitowoc Advancement Association is active in advertising the advantages of the city.

MISHICOTT.

Mishicott, Manitowoc county, is an unincorporated village of about 500 people, located 7 miles from the railroad station; has telephone.

The village has a small undeveloped water power. Coal is hauled from Two Rivers. Such raw materials as fruit, vegetables, clay, sand and hardwood timber can be supplied, and plenty of help procured. A canning factory is best suited for the place. This village is supplied with a drug store, 2 groceries,

hardware, 3 dry goods stores, 2 blacksmith shops, wagon shop, brewery, 2 flouring mills, 2 saw mills, shoe store, cigar factory, 2 meat markets, furniture store, 2 physicians, a dentist, lawyer, graded school, 4 hotels and 2 boarding houses.

Nearly all the land of the surrounding country suitable for farming purposes is improved. The soil is an excellent clayey loam, level, free from stone and swamps.

REEDSVILLE.

Reedsville, Manitowoc county, is an incorporated village of 515 inhabitants. Located on the C. & N. W. railroad, 179 miles from Chicago, 94 miles from Milwaukee, 41 miles from Sheboygan and 15 miles from Manitowoc. Excellent freight and passenger facilities. Has telephone and telegraph. American Express.

Wood and coal are the fuels used, the latter being shipped in. Such raw materials as fruit, vegetables, peas, clay, sand, peat, timber and stone can be supplied, and plenty of help procured. A canning factory is best suited for the place. The village has 1 grocery, 1 hardware store, 3 dry goods stores, tailor shop, cigar factory, 2 saw mills, shoe store, 2 meat markets, 3 blacksmith shops, 3 agricultural implement establishments, 2 hotels, 1 physician, 3 public schools and 2 parochial schools. A first class hotel is needed.

Nearly all of the land of the surrounding country suitable for farming purposes is improved. The soil is practically free from stone.

TWO RIVERS.

Two Rivers, Manitowoc county, is a city having a population of 4,602 inhabitants, located on the C. & N. W. railroad and a line of steamers. Is 171 miles from Chicago, 89 miles from Milwaukee, 33 miles from Sheboygan and 6 miles from Manitowoc. Has electric railway connections with other cities. Telephone and telegraph. Excellent freight and passenger facilities. American Express.

Coal is shipped in by water, wood by railroad. Raw materials can be procured at reasonable transportation rates. A metal or wood working establishment is best suited for the place. The city is supplied with an electric light plant, 2 banks, 2 drug stores, 8 groceries, 2 hardwares, a departments store, 8 dry goods stores, 2 laundries, a wire factory, aluminum novelty works, 1 printer's case and cabinet factory manufacturing wood type, printers' cases, dental chairs, office and railroad furniture, a Veneer Seat Co., a Wood Specialties factory, foundry, wagon works, brewery, 5 meat markets, 3 millinery stores, 2 confectionery establish-



TIMOTHY HAY FIELD NEAR KNOULTON. FARM HOME OF C. E. GUENTHERS.

ments, 2 clothing stores, 4 hotels, 3 boarding houses, 5 physicians, lawyers, a high school employing 25 teachers. The city is well provided with public and private parks, public halls, churches, excellent streets, walks and an abundance of shade trees. A weekly newspaper is published.

About ten per cent of the land surrounding the city is rough, with some stony land, some marshy, and a little sandy soil. The soil is a clayey loam and is well adapted for farming purposes.

MARATHON COUNTY.

Marathon county is located in the central part of the state. The area is 1,532 square miles, making it the largest county in the state. The population in 1905 was 50,249, a gain of 6,993 over the census of 1900. One-fourth of the population is of foreign birth, two-thirds of which are Germans. There are also large numbers of Poles and Canadians. The farm area in 1905 was 350,854 acres of which 238,089 acres were improved. In 1890 the farm area was 276,111 acres, of which 83,863 acres were improved. The value of the farms in 1905 including improvements was \$13,919,155, as against \$4,284,971 in 1890, showing a gain of \$9,634,184 or nearly 225% in 15 years. The topography of the county is gently rolling, but in places is irregular, consisting of ridge land areas trenched by the valleys of rivers and tributary streams. The soils in the eastern part of the county are clay loams varying to lighter loams. This soil is generally stony but where the lands are gently sloping, boulders are often almost entirely absent. The amount of stones is not enough to interfere permanently with cultivation. This soil is best suited to the growth of corn and potatoes. The central part of the county with the exception of an irregular area of level sandy soil bordering the Wisconsin river and extending a long way eastward, is a clayey loam mixed with a variable amount of small rock fragments. It is one of the most fertile soils in the Mississippi valley and is adapted to the growth of all the farm crops of the northwest. On account of the climate, rainfall and excellent drainage it seems best adapted to dairying and stock-raising. The thrifty condition of dairying is shown by the numerous creameries and cheese

factories found through this region. The hardier varieties of apples, cherries and plums can be grown if proper care is observed. In the northern and western parts of the county the soil is a heavy clay, making a good strong land, very productive and durable. Its excellent drainage and abundant crops of grasses and clover give promise of it becoming a wealthy dairy and stock growing region. Small grains and garden truck are easily grown. Irregular tracts of swamp land occur in the eastern and southern parts. The principal crops and their acreage in 1890 and 1905 were as follows:

	Acreage in 1890.	Acreage in 1905.
Wheat	6,851	5,382
Oats	18,553	37,246
Barley	912	6,082
Rye	2,177	2,245
Hay	34,619	63,259
Potatoes	2,426	5,680

In 1905 there were 33 cheese factories and 19 creameries in the county. While the pine has been nearly all cut, there is still considerable birch, basswood, elm, maple and some oak. The price of unimproved land ranges from \$8 to \$15 per acre. Improved land ranges from \$40 to \$100 per acre. The total present farm acreage is but 33% of the area of the county. Wausau is the county seat and largest city. The table on page 645 shows the population of the cities, towns and villages of the county in 1905.

ATHENS.

Athens, Marathon Co., is an incorporated village having 862 inhabitants, located on the Abbotsford & North-Eastern Ry., 15 miles from Abbotsford, 321 miles from Chicago and about 238 miles from Milwaukee. Telephone and telegraph. Good freight and passenger facilities. National Express.

Wood procured from the surrounding country is the principal fuel. The village has a good supply of water for household and manufacturing purposes. Such raw materials as small fruit, vegetables, clay, sand and an abundance of timber can be supplied. A furniture factory or other woodworking establishment is best suited for the place. Plenty of help can be secured. The village is supplied with an electric light plant, a bank, drug store, 4 groceries, 2 hardwares, 7 general stores, a clothing store, feed store, 2 meat markets, 1 jewelry store, a bakery, newspaper,

MARATHON COUNTY.

TOWNS, CITIES AND VILLAGES.	Families.	AGGREGATE POPULATION.			COLOR.			Ex-soldiers and sailors.	Militia.
		Male.	Female.	Total.	White.	Colored.	Indians.		
Bergen	129	327	297	624	623	1	6	111	
Berlin	169	521	498	1,019	1,019		8	187	
Bern	77	237	196	433	433			72	
Brighton	136	372	329	701	701		6	123	
Cassel	184	611	517	1,128	1,128		1	195	
Cleveland	260	769	699	1,468	1,468		2	284	
Colby, city	59	124	141	265	265		5	44	
Day	172	530	436	966	966		2	165	
Easton	153	481	383	864	864			155	
Eau Plaine	146	421	356	777	777		3	119	
Eldron	138	379	312	691	681	10	5	139	
Emmet	155	449	416	865	865		3	166	
Fleith	72	227	185	412	412			75	
Frankfort	125	370	287	657	657			124	
Franzen	34	107	81	188	177	11	1	48	
Halsey	89	288	267	555	555		1	110	
Athens, village	161	476	386	862	862			230	
Hamburg	156	480	462	942	942			165	
Harrison	71	169	144	313	313		3	59	
Hewitt	67	170	146	316	311			44	
Holton	242	659	597	1,256	1,256		6	233	
Hull	201	528	463	991	931		8	197	
Johnson	157	466	394	860	860		4	160	
Knowlton	94	268	247	515	515		2	85	
Kronenwetter	94	260	251	511	511		2	78	
Maine	196	640	545	1,185	1,185		2	198	
Marathon	120	388	364	752	752		2	117	
Edgar, village	166	367	386	753	753		1	160	
Marathon, village	125	303	279	582	582		3	102	
McMillan	195	549	523	1,072	1,072		4	135	
McMillan, village	29	71	65	136	136		1	30	
Mosinee	80	233	221	454	447	7	1	62	
Mosinee, village	122	261	269	530	527	3	4	92	
Norrie	206	542	520	1,062	1,062		6	159	
Pike Lake	204	609	566	1,175	1,168	7		183	
Plover	100	246	218	464	462	2	3	81	
Rib Falls	143	422	392	814	814		2	141	
Rietbrock	177	495	484	979	979			168	
Ringle	79	254	171	425	425		1	100	
Spencer	108	280	289	569	569		2	79	
Spencer, village	82	146	165	311	311		15	63	
Stettin	186	560	552	1,112	1,112		2	163	
Texas	179	538	451	989	989		2	213	
Brokaw, village	76	257	176	433	433			141	
Wausau	180	553	545	1,098	1,098		3	188	
Wausau, city:									
ward 1	391	885	953	1,838	1,837	*1	4	333	
ward 2	294	788	680	1,468	1,468		2	372	
ward 3	249	676	671	1,347	1,347		2	277	
ward 4	235	508	539	1,047	1,047		13	206	
ward 5	464	1,088	1,126	2,164	2,164		15	353	
ward 6	303	803	736	1,539	1,529		5	293	
ward 7	391	967	892	1,859	1,855	4	9	409	
ward 8	359	866	853	1,719	1,719		4	293	
ward 9	317	754	723	1,477	1,477			310	
Total, city	14,458								
Wein	130	382	351	733	733			146	
Fenwood, village	43	103	95	198	198			33	
Weston	157	570	472	1,042	1,042		2	174	
Schofield, village	141	387	357	744	744		1	157	
Total	9,573	26,130	24,119	50,249	50,198	10	41	180	9,299

†Part in Clark county; total for city, 849.

*1 Chinaman.

restaurant, 2 hotels, 2 boarding houses, a public school employing five teachers, 2 physicians, and 1 lawyer. The streets are shady and well kept. Two parochial schools are located here. The village has a public park.

The soil in this vicinity is exceptionally good for farming purposes after the timber is cleared away. The land is level and practically free from stone and marshes.

COLBY.

See Clark Co.

EDGAR.

Edgar, Marathon Co., is an incorporated village of 753 population, located on the C. & N. W. Ry., 284 miles from Chicago, 199 miles from Milwaukee and 149 miles from Manitowoc. Freight and passenger facilities good. Telephone and telegraph. American Express.

About 100 laborers can be secured for factory work. Wood is the principal fuel. Such raw materials as clay for brick and tile, timber and vegetables can be supplied; any establishment manufacturing box shooks, excelsior, clothes-pins, broom handles, etc., is best suited for the place. A flouring mill would probably do well here also. The village is supplied with a bank, drug store, 4 groceries, 2 hardwares, 4 general stores, 2 meat markets, 2 furniture stores, 1 millinery and confectionery establishment, a harness shop, 3 blacksmith and wagon shops, newspaper, and 3 boarding houses. A first class hotel is needed.

The land surrounding the village is good for farming purposes, about three-fifths of which is improved. There is some rolling land and considerable swampy land.

HATLEY.

Hatley, Marathon Co., is an unincorporated village of about 300 inhabitants, located on the C. & N. W. Ry., 250 miles from Chicago, 165 miles from Milwaukee and 16 miles from Wausau. Fairly good freight and passenger facilities. Telegraph. American Express.

The village has a small undeveloped water power. An abundance of good hardwood for fuel is supplied from the surrounding country. Plenty of labor can be secured. Such raw materials as stone and wood can be supplied and any industry utilizing these is desirable. A hardwood lumber mill would do well here. Hatley has 3 general stores, 1 hardware, 1 hotel and a boarding house. Another hotel is needed.



WHEAT FIELD NEAR KNOWLTON, WIS.

Only about one-fourth the land surrounding the village suitable for farming purposes is improved. About one-half the land here is level but stony; one-eighth marshy, and one-eighth sandy, but all can be made good farming land.

KNOWLTON.

Knowlton, Marathon Co., is an unincorporated village of about 300 people, located on the C., M. & St. P. Ry., 295 miles from Chicago, 210 miles from Milwaukee and 114 miles from La Crosse. Has good freight and passenger facilities. Telegraph and telephone. U. S. Express.

A water power can be developed here. Any amount of help can be secured for factory work. Such raw materials as vegetables, clay, sand, timber and stone can be supplied. A paper mill is best suited for the place. In close proximity to the village is a large tract of hemlock, estimated at 250 million feet.

The land surrounding the village is well adapted to general farming, only about one-tenth of which is improved. The unimproved land is on the market at a reasonable price.

McMILLAN.

McMillan, Marathon Co., is an incorporated village of 136 people, located on the C. & N. W. Ry., 276 miles from Chicago, 198 miles from Milwaukee and 5 miles from Marshfield. Has telephone and telegraph. American Express.

Wood from the surrounding forests is the principal fuel. There is a small water power here that can easily be developed. Any establishment that can use such raw materials as small fruit, vegetables, clay, stone and timber is best suited for the place. The village is supplied with a grocery store and a boarding house.

The land of the surrounding country is the very best for general farming and stock raising, about one-half of which is improved.

MARATHON CITY.

Marathon, Marathon Co., is an incorporated village of 582 inhabitants, located on the C. & N. W. Ry., 278 miles from Chicago, 193 miles from Milwaukee, and 143 miles from Manitowoc. Has excellent freight and passenger facilities. Telephone and telegraph. American Express.

This place has an excellent undeveloped water power. About 200 laborers can be secured for factory work. Wood secured from the surrounding forests is the principal fuel. Such raw materials as fruit, vegetables, clay, sand, stone and timber can be supplied. A paper mill and general store are best suited for the place, but any establishment using timber as a raw material would probably do well here.

The village is supplied with an electric light plant, a bank, drug store, 4 grocery stores, 2 hardware stores, 4 general stores, 3 furniture stores, an excelsior mill, brewery, a saw mill, hotel, a park, good streets, a public school employing 7 teachers, and 1 physician.

The soil of the surrounding country is well adapted for farming purposes. The soil is comparatively free from stone, with some marshy land west of the village, and a little sandy soil along the river.

MOSINEE.

Mosinee, Marathon Co., is an incorporated village having 530 inhabitants, located on the C., M. & St. P. Ry., 300 miles from Chicago, 215 miles from Milwaukee and 119 miles to La Crosse. Telegraph and telephone. Good freight and passenger facilities. U. S. Express.

A splendid undeveloped water power is located here. Such raw material as small fruit, vegetables, clay, sand, stone and timber can be supplied, and 175 laborers procured. Wood obtained in the immediate vicinity is the principal fuel. The village is supplied with an electric light plant, 1 bank, a drug store, 5 general stores, a hardware, restaurant, hotel, harness shop, blacksmith and wagon shop, 2 furniture stores and undertaking establishments, 1 millinery store, 2 fruit and confectionery establishments, a public school system employing 5 teachers, a newspaper, 2 physicians and 2 lawyers. This village is among the most beautifully located in the state. A first class hotel would probably do well here.

The land of the surrounding country is well adapted for general farming, about one-fourth being improved.

NORRIE.

Norrie, Marathon Co., is an unincorporated village of about 250 inhabitants located on the C. & N. W. Ry., 246 miles from Chicago, 161 miles from Milwaukee and 78 miles from Oshkosh. Good freight and passenger facilities. Telephone and telegraph. American Express.

About 200 laborers can be secured in the village and the surrounding country for factory work. Such raw materials as small fruit, vegetables, clay, stone, sand and timber can be supplied. A brick yard or woodworking factory is best suited for the place. The village is supplied with 2 grocery stores, 1 general store, 1 hotel and a boarding house.

The land of the surrounding country is suitable for general farming purposes, one-third of which is improved. There is some marshy, stony and sandy land here.



SCENE NEAR WAUSAU, WIS.

SCHOFIELD.

Schofield, Marathon Co., is an incorporated village of 744 inhabitants, located on the C., M. & St. P. Ry., 309 miles from Chicago, 224 miles from Milwaukee and 128 miles from La Crosse. Has telephone and telegraph. Good freight facilities. Six passenger trains daily. U. S. Express.

A box factory or paper mill is most suitable for the place. Such raw materials as vegetables, sand, stone and timber can be supplied. All the help needed can be secured. The village is large enough to support a bank, drug store and a physician, although it is only three miles from Wausau. The village is provided with 2 general stores, 1 hotel and boarding house. Another hotel is desired.

The soil along the river and near the hills is sandy. About one-half the land suitable for farming is improved.

SPENCER.

Spencer, Marathon Co., is an incorporated village of 311 inhabitants, located on the W. C. Ry., 9 miles from Marshfield, 293 miles from Chicago and about 210 miles from Milwaukee. Has good freight and passenger facilities. Telephone and telegraph. National Express.

Wood from the surrounding country is the principal fuel. Such raw materials as small fruit, vegetables, clay, sand, peat, stone and timber can be supplied and a sufficient supply of labor secured. A canning or woodworking factory is best suited for the place. The village is supplied with 2 drug stores, 4 grocery stores, 2 hardware stores, 3 general stores, 2 hotels, 1 boarding house, 1 furniture store, 2 meat markets, a graded school employing 5 teachers, 2 physicians and one lawyer.

The soil of the surrounding country is first class for general farming purposes. About one-fourth the land is improved and is practically free from stone, swamps and sand.

UNITY.

Unity, Marathon Co., is an unincorporated village of about 450 people located on the W. C. Ry., 299 miles from Chicago, 164 miles from St. Paul and about 216 miles from Milwaukee. Telephone and telegraph. Good freight and passenger accommodations. National Express.

Such raw materials as small fruit, vegetables, clay, sand, stone, and an abundance of timber can be supplied. A broom handle, woodenware, or canning factory is best suited for the place. Plenty of help can be secured. Wood from the immediate vicinity is the principal fuel. An electric light plant run in connection with some factory would pay a fair income on

money invested. A bank could be made to pay a fair income also. The village is supplied with a drug store, 4 general stores, 2 hardware stores, a department store, 3 hotels, 1 boarding house, a public school employing 5 teachers, and 1 physician. A weekly newspaper is published.

About one-third the land in this vicinity suitable for farming purposes is improved. The soil is excellent for general farming. The land is level, but little stony, swampy or sandy.

WAUSAU.

Wausau, Marathon Co. Population, 14,458. Located near the geographical center of the state, 171 miles from Madison, 228 miles from Milwaukee. C., M. & St. P. Ry., and C. & N. W. Ry. Electric railway system to connect with Merrill under construction. Water-works system. Gas and electric light plant. Telephone connection. Western Union telegraph. American and United States Express companies.

Wausau is the commercial center of a large part of northern Wisconsin and is the metropolis of the Wisconsin river valley. The surrounding country is yet very scantily settled but the soil, most of which is of a very high native fertility, is inviting a desirable quality of immigrants and resulting in the rapid commercial growth of the city. Wausau is today the center of the lumber industry, being the location of four large saw mills, while many times that number are found in the territory adjacent. There are many excellent water powers in and about the city, some of which are as yet undeveloped and would furnish power for several large manufacturing establishments. Owing to this great power, which can be developed at a comparatively reasonable cost, enabling Wausau to furnish power at a very low rate, this city is destined to become an important milling and manufacturing center. Its manufacturing establishments in 1905 numbered 58, with an aggregate capitalization of \$3,815,163, employing 1,945 wage-earners and with a total output of \$4,644,457, exceeding many of the larger cities in the state. During the last five years its manufacturing capital has increased 37.6 per cent, number of employes 13.3 per cent, and annual product 37.4 per cent. Its principal products are lumber, sash and doors, veneer, sand paper, leather, boxes and malt liquors.

Owing to the proximity to the pine and hardwood forests, Wausau is well located for the manufacture of agricultural implements, vehicles and paper. Excellent granite is found near the city. Vegetables can be grown for canning factories.

MARINETTE COUNTY.

Marinette county is located in the northeastern part of the state on the Menominee river. The area is 1,396 square miles. The population in 1905 was 33,730, a gain of 2,908 over the census of 1900. Nearly one-third of the population is foreign born, Canadians, Germans and Swedes predominating, but there are also large numbers of Norwegians and Poles. Marinette county is still the seat of a great lumbering industry, and only a comparatively small amount of the available land of the county has been brought under cultivation. The total area of the farms in 1905 was 164,398, of which only 60,257 acres were improved. This total acreage is less than 25% of the tillable land of the county. Most of the present development has been the work of the last decade. In 1890 the farm area was but 58,451 acres, of which only 22,591 acres were improved. The valuation of the farms including improvements, increased from \$1,202,170 in 1890 to \$4,040,736 in 1905, of 236% in fifteen years. The northern and central portions of the county have a rough and rugged surface. The southern part of the county bordering on Green Bay is low and marshy. The soil of the county is very diversified. The southern third of the county is largely clayey loam, with the exception of the tract north of Peshtigo Harbor, which is sandy. The northern two-thirds of the county is largely sandy or a sandy loam. A small belt in the western part of the county and another in the northeastern part have a soil of clayey loam. Numerous irregular tracts of humus soils are found throughout the county. The chief crops and the acreage devoted to each in 1890 and 1905 were as follows:

	Acreage in 1890.	Acreage in 1905.
Wheat	850	1,556
Oats	3,777	11,407
Rye	515	1,200
Corn	342	1,171
Hay	9,086	17,914

Very little has yet been done with the dairy industry, although much of the soil is well adapted to such use. The

more general adoption of dairying by farmers of this county will mean a steady and remunerative income to the community. The immense tracts of cut-over lands in this and other northern counties, offer an excellent opportunity for sheep breeding for the purpose of cleaning the land and for its enrichment. By the establishment of beet sugar factories in the north, many farmers are turning their attention to this new industry and with excellent results. Unimproved cut-over lands can be purchased at from \$5 to \$12 per acre according to quality and the amount of wood remaining on the land. Improved farms range from \$30 to \$75 per acre, the price in each case depending upon location and quality of soil. Marinette is the county seat. The following table shows the population of the local political divisions:

MARINETTE COUNTY.

TOWNS, CITIES AND VILLAGES.	Families.	AGGREGATE POPULATION.			COLOR.			Ex-soldiers and sailors.	Militia.
		Male.	Female.	Total.	White.	Colored.	Indians.		
Amberg	475	1,723	1,079	2,802	2,762	....	40	3	780
Athelstane	86	268	191	399	337	....	2	6	63
Beaver	186	583	561	1,144	1,144	....	....	2	192
Coleman, village	86	250	216	466	466	....	....	....	100
Dunbar	185	413	335	748	738	....	10	....	158
Grover	384	1,184	1,008	2,192	2,192	....	....	4	389
Lake	68	265	188	453	450	3	....	3	106
Marinette, city:									
ward 1.....	541	1,360	1,302	2,662	2,662	....	....	8	478
ward 2.....	618	1,539	1,574	3,173	3,173	....	....	8	552
ward 3.....	676	1,681	1,695	3,376	3,371	....	6	9	603
ward 4.....	673	1,670	1,636	3,306	3,287	*5	14	7	677
ward 5.....	547	1,424	1,413	2,837	2,771	....	66	16	575
Total, city...15,354									
Peshigo	242	730	622	1,352	1,350	....	2	1	214
Peshigo, city:									
ward 1.....	139	436	361	797	797	....	....	....	250
ward 2.....	170	392	418	810	810	....	....	....	121
ward 3.....	166	494	438	932	932	....	....	....	217
Total, city...2,559									
Porterfield	287	845	636	1,481	1,481	....	....	....	19
Pound	344	1,048	970	2,018	2,018	....	....	....	285
Stephenson	192	566	487	1,053	1,053	....	....	....	319
Wausaukee	345	905	823	1,729	1,729	....	....	....	174
Total	6,420	17,777	15,953	33,730	33,582	8	140	107	6,572

*4 Chinamen.

AMBERG.

Amberg, Marinette Co. Population, 500. An unincorporated village on the C., M. & St. P. Ry., and on Pike river, in the northeastern part of the county, 40 miles northwest of Marinette, 9 miles from Wausaukee the nearest banking point, 23 miles from Iron Mountain, Mich., 134 miles from Milwaukee and 269 from Chicago. United States Express. Telegraph and telephone. Good shipping facilities and passenger service.

This village is supplied with 3 general merchandise stores, 2 hotels, 3 boarding houses, graded school employing 3 teachers, Catholic and Presbyterian churches, 2 blacksmith shops, 1 shoe and harness shop, meat market, 3 granite works, a monument shop and a saw mill.

There is a fine undeveloped water power one-half mile from the railway station which can be utilized for manufacturing. Wood for fuel is obtained from the adjacent country. Vegetables can be furnished for canning. The natural products comprise sandstone and granite, also a marl bed 5 miles distant and silica sandstone 12 miles distant. A limited amount of help can be secured.

About 40 per cent of the surrounding country is sandy and 10 per cent swampy. Only about 5 per cent of the land suitable for crop raising is improved. Sheep raising, dairying and potato growing will be the farming specialties in this section.

COLEMAN.

Coleman, Marinette Co. Population, 466. An incorporated village on the C. M. & St. P. Ry., in the southern part of the county, 32 miles (by rail) from Marinette, the county seat, and banking point; 42 miles north of Green Bay, 150 miles from Milwaukee and 237 miles from Chicago. United States Express. Telephone and telegraph. Fairly good shipping facilities and passenger service.

The village has an electric light plant, 1 drug store, 2 hardware and 4 general merchandise stores, laundry, 2 hotels, 1 boarding house, graded school, 3 teachers employed, a physician, 1 lawyer, meat market, 3 blacksmith shops, sawmill, planing mill, lath and shingle mill.

Steam power is used and wood is the fuel. Vegetables can be furnished for canning. Clay, sandstone and timber are the natural products. There is plenty of help here.

The surrounding country is level and free from stone and only about 75 per cent improved. The village needs a first class hotel, and will offer good inducements for a canning factory or wood-working factory.

CRIVITS.

Crivitz, Marinette Co. Population, 200. An unincorporated village on the C. M. & St. P. Ry., 20 miles northwest of Marinette the county seat, 50 miles north of Green Bay, 164 miles from Milwaukee and 249 miles from Chicago. United States Express. Telegraph and telephone. Good shipping facilities and passenger service.

Is supplied with electric light plant, 3 grocery stores, 2 hardware and 3 general stores, 3 hotels, graded school employing 2 teachers, 1 physician, meat markets, blacksmith shops, pulp mill, planing mill, Catholic church, and an opera house.

A water power here of 2,000 H. P. not utilized is worth considering. Plenty of wood in the surrounding country insures cheap fuel. Fruit and vegetables can be furnished for canning. Clay, sand, lime stone, small pine and hemlock timber are the natural products. Some help can be secured. The village is a summer resort. Good lake and trout fishing in the vicinity. Good location for a canning factory using peas and beans, or a pickle salting station.

The surrounding country is good for farming and only about 1-10 of the land suitable for crop raising is improved.

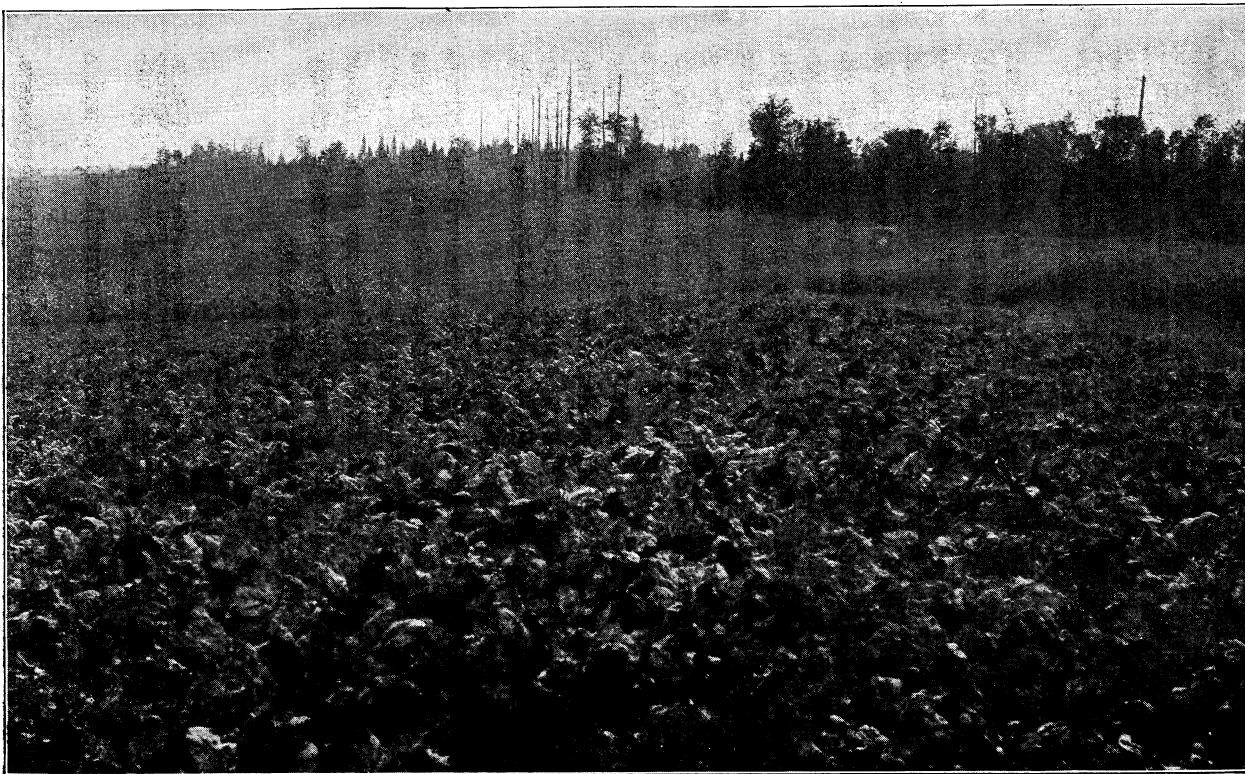
DUNBAR.

Dunbar, Marinette Co. Population, 500. An unincorporated village located on M. St. P. & S. Ste. M. Ry., and the Dunbar & Wausaukee Ry., the latter connecting with the C. M. & St. P. Ry., at Girard Jet. It is 59 miles northwest of Marinette, and 24 miles from Iron Mountain, Mich., the nearest banking point. Western Express. Telegraph and telephone. Good shipping facilities and passenger service.

The village is supplied with 1 general store, 1 hotel, 1 physician, graded school employing 5 teachers, and good church privileges. The village is a nicely laid out lumber town, has sidewalks and no saloons. It is located in the extreme northern part of the county.

Wood is used for fuel. Brick clay, sand, granite and hardwood timber are the natural products. This is a good location for a pressed brick and tile factory, as the clay is claimed to be the best in the state for this purpose. The large amount of hardwood timber makes this a fine location.

The surrounding country is good for farming and only a small portion of the land suitable for crop raising is improved.



BEETS, OATS, AND CORN, NEAR MARINETTE, WIS.

MARINETTE.

Marinette, Marinette Co. Population, 15,354. 184 miles from Milwaukee, 267 miles from Madison and 269 miles from Chicago. C. & N. W. R. R.; C. M. & St. P. R. R. and the Mich. & Wis. R. R. The Ann Arbor R. R. operates a car ferry from this port to connect with eastern lines. The harbor is one of the best on Green Bay. The Lackawanna line of steamers make regular trips between Marinette and Buffalo. Other steamship companies operating boats from here to Lake Michigan and Green Bay ports are the Goodrich Transportation Co., the Barry line, the Green Bay Transportation Co., the Waggoner & Roulett and the Hill lines. Electric railway operates in this city and in Menominee, Mich., on the opposite side of the river. Water works. Gas and electric plants. American and United States Express. Telegraph and telephone. County seat.

Marinette is located on Green Bay at the mouth of the Menominee river, one of the finest water power streams in the state. One thousand five hundred horse power furnished by the dams at this point is not yet utilized and there are several excellent power sites within a reasonably short distance. By reason of its excellent shipping facilities, undeveloped water powers, nearness to the iron mines, reasonable coal shipping rates and the immense forests in the rear, Marinette offers excellent advantages to the manufacturer, sand, clay, timber, iron, sandstone and granite can be obtained in abundance. Plants for the manufacture of agricultural implements, woodenware and machinery are especially desired. In 1905 there were 37 factories here, with a capitalization of \$3,283,598, employing 1,645 men and having a total output of \$3,633,399. The chief products are lumber, shingles, sash and doors, boxes, paper and pulp and agricultural implements. There is one unoccupied factory which was formerly used for a machine shop and foundry.

Marinette has 16 physicians and 14 lawyers and 70 teachers employed in the public schols. There are 18 hotels of various sizes and 9 boarding houses, furnishing accommodations for 600 persons. A Chatauqua Assembly holds sessions each summer near this city. The Marinette Chamber of Commerce is actively engaged in the industrial development of the city.

MIDDLE INLET.

Middle Inlet, Marinette Co. Population, 100. A village on the C. M. & St. P. Ry., in Peshtigo township, 25 miles northwest of Marinette and 6 from Wausaukee the nearest banking point. United States Express. Telegraph and telephone. Fairly good shipping facilities and passenger service.

Has 2 general stores, a public school, blacksmith shop and a saw and shingle mill.

Wood is used for fuel obtained from the surrounding forests. The village can be supplied with plenty of sand, stone, timber and granite.

The surrounding country is suitable for farming and only about 20 per cent of the land is improved.

NIAGARA.

Niagara, Marinette Co. Population, 1,000. An unincorporated village in Amberg township, 60 miles north of Marinette the county seat, 8 from Iron Mountain, Mich., the nearest banking point and $3\frac{1}{2}$ from Quinnesec, Mich., its shipping point.

This village has a telephone system, 2 grocery stores, a dry goods and boot shoe store, 1 general store, graded public school employing 8 teachers, Catholic and Methodist churches, 2 hotels, 1 boarding house, 1 physician, 1 dentist, a photographer, a newspaper, tailor shop, meat market, barber shop, and paper mill.

There is an undeveloped water power here. Wood is used for fuel and is obtained in the vicinity. The natural products are sand, building stone and timber. Help can be secured in the village.

About 20 per cent of the surrounding country is level and free from stone, 10 per cent swampy and 10 per cent sandy. Very little of the land suitable for crop raising is improved.

PEMBINE.

Pembine, Marinette Co. Population, 400. An unincorporated village located at the junction of the C. M. & St. P., and the M. St. P. & S. Ste. M. Ry's., 49 miles from Marinette, the county seat, 14 miles from Iron Mountain, Mich., the nearest banking point, 193 miles from Milwaukee and 270 miles from Chicago. United States and American Express. Telegraph and telephone. First class shipping facilities and passenger service.

The village has 2 general stores, 4 hotels, 3 boarding houses, graded school employing 2 teachers, and is a summer resort.

A water power not utilized estimated at 5,000 horse power can be developed. Has an abundance of wood for fuel and timber enough within a radius of 10 miles to supply a box factory for 20 years. Any amount of help can be secured in the vicinity.

The adjacent country is rough and only about 10 per cent of the land suitable for crop raising is improved. There is plenty of small soft wood timber on the cut-over lands and a large amount of hardwood.

PESHIGO.

Peshigo, Marinette Co. Population, 2,539. An incorporated city located in the southeastern part of the county on the C. & N. W. Ry., and Wis. & Michigan Ry., 7 miles from Peshigo Harbor on Green Bay. It is 7 miles from Marinette, the county seat, 13 miles from Oconto, 170 miles from Milwaukee and 255 miles from Chicago. American Express. Telegraph and telephone. Shipping facilities and passenger service good.

The city has a system of water works, is lighted by electricity, has a bank, 2 drug stores, 4 grocery stores, 2 hardware

and 2 general merchandise stores, a laundry, 5 hotels, 3 boarding houses, good public schools employing 16 teachers, churches of the leading religious denominations, 2 physicians, 2 restaurants, 1 millinery store, opera house, flour, saw and planing mills and a creamery. A weekly newspaper is published.

There is a water power here all utilized. There is an abundance of cheap fuel consisting of slabs and all kinds of hard and soft wood timber. Fruit and vegetables can be furnished for canning. Sand and timber are the natural products. Plenty of help can be secured to work in factories. There is a splendid opening here for a furniture factory.

About one-half of the surrounding country suitable for crop raising is improved. 20 per cent of the land is swamps, 20 per cent stony, 10 per cent sandy.

POUND.

Pound, Marinette Co. Population, 350. An unincorporated village on the C. M. & St. P. Ry., in the southern part of the county, 30 miles from Marinette, the county seat, and banking point, 154 miles north of Milwaukee and 239 miles from Chicago. United States Express. Telegraph and telephone. Good shipping facilities and passenger service.

The village has 4 general merchandise stores, 1 hardware store, furniture store, 2 hotels, graded school employing 3 teachers, 3 churches, 1 physician, 2 blacksmith shops, 2 barber shops, 1 flour mill and a saw mill.

Steam power is used here, but plenty of timber near by supplies the fuel at reasonable prices.

The natural products are clay, sand and timber. A limited amount of help can be secured in the village and adjacent country. There is a good opening here for woodenware factory.

About one-third of the land surrounding the village suitable for crop raising is improved. Soil is a sandy loam and clay.

WAGNER.

Wagner, Marinette Co. Population, 200. An unincorporated village on the Wisconsin & Michigan Ry., in the eastern part of the county, 19 miles north of Marinette, 26 miles from Peshtigo Harbor from which point shipping can be sent by way of Sturgeon Bay and Lake Michigan water routes. American Express. Telegraph connections.

Has one grocery store and 1 general merchandise store, 2 boarding houses, graded school employing 2 teachers. A good hotel is needed.

Steam power is used but there is plenty of wood for fuel in the adjoining country. Fruit and vegetables can be supplied as raw material, and clay, sand, stone and timber are the natural

products. Some help can be secured. A good opening here for a small factory using timber products.

About one-fourth of the land suitable for crop raising in the surrounding country is improved. The soil is a clay loam, a very small portion sandy or swampy and most all of it level and free from stone.

MARQUETTE COUNTY.

Marquette county is located in the south central part of the state. The area is 451 square miles. The population in 1905 was 10,974, a gain of 451 over the census of 1900. The number of foreign born equals about one-sixth of the total population consisting almost entirely of Germans. It is exclusively an agricultural county. The total farm area in 1905 was 258,170 acres, of which 113,8588 acres were improved land. Practically all the tillable land is occupied. The value of the farms in 1905, including improvements was \$5,407,058, as compared with a valuation of \$2,726,740 in 1890, a gain of nearly 100 per cent in 15 years. With few exceptions the soil covering the county is a sandy loam. It is a warm and easily worked soil, and rather fine in texture. It is of the same nature as the soil of Waupaca and Waushara counties where it has yielded most excellent results both as to quality and quantity, with potatoes and small fruits. On account of its light and open texture, and relatively small water capacity it is not best suited to hay or grain and in the line of animal husbandry is better suited for sheep and hogs than to dairying on an extensive scale. Wherever there is proximity to an adequate water supply, which is quite common in this county, and the lay of the land is suitable, this soil is well adapted to irrigating for small fruits, potatoes and market gardening. There are numerous areas of humus soil in different parts of the county. The chief crops and the acreage devoted to each in 1890 and 1905 were as follows:

	Acreage in 1890.	Acreage in 1905.
Wheat	5,255	1,490
Oats	10,234	13,167
Rye	16,997	19,547
Corn	15,784	17,156
Clover seed	5,804	5,983
Hay	26,055	26,176
Potatoes	1,512	4,109

There are 12 creameries in the county. The price of unimproved land ranges from \$10 to \$25 per acre. For improved land the range of prices is from \$25 to \$60 per acre. Montello is the county seat. The population of the towns, cities and villages of the county in 1905 was as follows:

MARQUETTE COUNTY.

TOWNS, CITIES AND VILLAGES.	Families.	AGGREGATE POPULATION.			COLOR.			Ex-soldiers and sailors.	Militia.
		Male.	Female.	Total.	White.	Colored.	Indians.		
Buffalo	162	433	368	801	801	.....	7	169
Crystal Lake	97	276	274	550	550	.....	1	105
Douglas	142	380	334	714	714	.....	8	129
Harris	115	278	273	551	551	.....	2	102
Mecan	120	315	303	618	618	.....	2	91
Montello	91	223	209	432	432	.....	8	77
Montello, village	267	535	555	1,090	1,090	.....	15	164
Moundville	158	323	337	657	656	1	10	121	
Neshkoro	159	416	395	811	811	.....	6	144
Newton	107	296	273	569	569	.....	2	90
Oxford	105	372	326	698	698	.....	9	111
Packwaukee	196	452	398	850	850	.....	15	170
Shields	117	320	297	617	617	.....	7	100
Springfield	137	341	336	677	677	.....	4	103
Westfield	116	293	228	521	521	.....	3	122
Westfield, village	198	407	411	818	818	.....	17	152
Total	2,287	5,657	5,317	10,974	10,973	1	116	1,949	

GERMANIA.

Germania, Marquette Co., is an unincorporated village having about 120 inhabitants. Located 6 miles from Neshkoro, the nearest railroad station.

Wood, is the principal fuel. A small undeveloped water power is located here. Vegetables, clay and sand can be supplied and some help procured. A flour mill is best suited for the place. There is a grocery, a dry goods and one hardware store, and a hotel located at this place.

The soil of the surrounding country is a sandy loam and is excellent for general farming purposes. The land is all improved.

MONTELLO.

Montello, Marquette Co., is an incorporated village of 1,090 inhabitants. Located on the Wisconsin Central Railroad, 63 miles from Stevens Point, and 8 miles from Portage. Telegraph and telephone. Good freight facilities. National Express.

Coal, shipped from Illinois and Pennsylvania, is the principal fuel used. Such raw materials as fruit, vegetables, sand, stone,

and some timber can be supplied, and about forty laborers procured. A canning factory is best suited for the place. It is supplied with an electric light plant, 2 banks, 1 drug store, 6 groceries, 2 hardwares, 4 general stores, 2 furniture stores, 1 jewelry store, a restaurant, 3 hotels, 3 physicians, 2 lawyers and a public school employing 7 teachers. A weekly newspaper is published. The town is a summer resort.

The country surrounding the village is rolling and has a somewhat sandy soil, and some marshy land. About forty per cent of the land suitable for farming purposes is improved.

NESHKORO.

Neshkoro, Marquette Co., is an unincorporated village of about 325 people. Located on the C. & N. W. Railroad, 194 miles from Chicago, 109 miles from Milwaukee and 132 miles from Janesville. Has good freight and passenger facilities. Telegraph and telephone. American Express.

A two hundred horse water power can be developed here. Such raw materials as fruit, and vegetables can be supplied in the immediate vicinity, and others can be shipped in by railroad at a very reasonable freight rate. Any amount of help can be procured. The village is supplied with 6 grocery stores, 2 hardwares, 6 general stores, 6 dry goods stores, a graded school, 1 physician and 2 hotels. This place can be made a summer resort town. A first-class hotel is needed.

The surrounding country is excellent farming land and is practically all improved. The land is somewhat swampy and sandy, but not stony.

OXFORD.

Oxford, Marquette Co., is an unincorporated village of about 250 inhabitants. Located about 6 miles from Packwaukee; has telephone communications.

This place has a 1,300 horse water power that can be developed. Wood is the principal fuel. Such raw materials as apples, small fruit, vegetables, clay, sand, and marl can be supplied, and plenty of help procured. A meat market and canning factory are best suited for the place. The village is supplied with 2 drug stores, 4 groceries, 2 hardwares, 2 general stores, barber shop, 2 blacksmith shops, a wagon shop, hotel, boarding house, 2 physicians and a graded school. A first class hotel is needed.

The surrounding country is most excellent for farming purposes; about three-fourths of the land suitable for this purpose are improved. The soil is clayey loam, but little stony or swampy.

PACKWAUKEE,

Packwaukee, Marquette Co., is an unincorporated village of about 350 people. Located on the Wisconsin Central Railroad 56 miles from Stevens Point and 15 miles from Portage. Telegraph and telephone. Good freight and passenger facilities. National Express.

Wood, procured from the surrounding country is the principal fuel. Such raw materials as fruit, clay, stone and small timber can be supplied, and a sufficient amount of help for a small factory can be secured. A starch or canning factory is best suited for the place. The village has a good supply of water for household purposes. It is already supplied with an electric light plant, drug store, 3 groceries, 2 hardwares, 3 drygoods stores, a potato warehouse, grain elevator, furniture store, a harness shop, barber shop, meat market, lumber yard, millinery store, machine and blacksmith shop, hotel, boarding house, 2 restaurants, 2 physicians and a graded school. The place is a summer resort town. Another hotel is desired. Buffalo lake is in close proximity of the village. The city has plenty of shade trees and many fine residences, churches, and a public park.

The surrounding country is level and the soil is but little stony, swampy, or sandy; about fifty per cent of the land suitable for farming purposes is improved.

WESTFIELD.

Westfield, Marquette Co., is an incorporated village of 818 inhabitants. Located on the Wisconsin Central Railroad 46 miles from Stevens Point and 25 miles from Portage. Telegraph and telephone. Good freight and passenger facilities. National Express.

This village has some undeveloped water power. Such raw materials as fruit, vegetables, clay, sand, timber and stone can be supplied, and some help procured. A canning factory and machine shop is best suited for the place. It is also supplied with an electric light plant, a bank, drug store, 6 groceries, 2 hardwares, 6 drygoods stores, 2 physicians, a newspaper, a lawyer and a graded school employing 6 teachers. It also has well-paved streets, and plenty of maple, elm and box elder shade trees.

The soil in this vicinity is very good for general farming purposes and but little stony, sandy or swampy. About two-thirds of the land suitable for farming purposes is improved.

MILWAUKEE COUNTY.

Milwaukee county is located in the southeastern part of the state, bordering on Lake Michigan. It is one of the smallest counties in the state, having an area of 228 square miles. The population in 1905 was 363,721, a gain of 33,704 over the census of 1900. Of this large population, 312,948 persons reside in the city of Milwaukee. Owing to the great urban growth, the acreage devoted to agricultural purposes has decreased from 124,752 acres in 1890, to 112,839 acres in 1905. The valuation of such lands including improvements has decreased from \$27,622,303 in 1890, to \$22,947,130 in 1905. Of the total farm area, 87,299 acres are improved. The surface of the county is generally level except where valleys have been cut by stream erosion. The soil of the county in the northeastern part is a heavy clayey loam derived from red locustrine clays. Covering the remaining part of the county the soil is a clayey loam of the medium and heavy varieties, which is regarded as one of the most fertile soils in the state and excellently adapted to general farming, dairying and stock raising. In the southwestern part of the county the soil shades into a light clayey loam. There are a few irregular areas of humus soils near the southern boundary. The leading farm products and the acreage devoted to each in 1890 and 1905 were as follows:

	Acreage in 1890.	Acreage in 1905.
Oats	15,182	15,813
Barley	10,269	5,633
Corn	5,483	7,725
Hay	31,137	30,760
Potatoes	5,188	5,246

Owing to the excellent market afforded in the city of Milwaukee, a large part of the county has been devoted to truck farming and market gardening. The dairy interests are not very strong, there being only 3 creameries and 1 skimming station. In the western part of the county considerable acreage is devoted to the raising of sugar beets. The county being very small and the suburban settlements extending long distances from the center of the city of Milwaukee, land values naturally have a very wide range, the price varying from about \$75 per acre for ordinary

farm lands, to over several hundred dollars per acre nearer the city. Milwaukee is the county seat. The following table shows the population statistics of the cities, villages and towns in the county in 1905:

MILWAUKEE COUNTY.

TOWNS, CITIES AND VILLAGES.	Families.	AGGREGATE POPULATION.			COLOR.			Ex-soldiers and sailors.	Militia.
		Male.	Female.	Total.	White.	Colored.	Indians.		
Franklin	351	938	815	1,753	1,753			4	342
Granville	427	1,118	996	2,114	2,114			7	426
Greenfield	1,322	3,245	3,103	6,348	6,348			19	1,247
West Allis, vil.	463	1,184	1,122	2,306	2,306			13	562
Lake	1,253	3,922	3,307	7,229	7,229			13	1,391
Cudahy, vil.	474	1,481	1,075	2,556	2,556			5	764
Milwaukee	909	2,563	2,382	4,945	4,936	9		14	952
E. Milwaukee, vil.	102	246	227	473	473			3	88
N. Milwaukee, vil.	276	673	563	1,236	1,236				316
Whitefish B., vil.	114	267	260	527	527			2	88
Milwaukee, city:									
ward 1.....	2,000	4,118	5,149	9,267	9,218	49		32	1,791
ward 2.....	2,214	4,750	4,487	9,237	9,122	115		9	2,247
ward 3.....	2,950	5,148	2,444	5,354	5,354			12	1,539
ward 4.....	2,239	5,148	4,474	9,622	9,273	*349		38	3,121
ward 5.....	2,087	5,485	4,448	9,933	9,933			14	2,939
ward 6.....	2,949	6,498	6,455	12,953	12,933	20		38	2,955
ward 7.....	1,303	2,937	3,589	6,526	6,447	†79		17	1,611
ward 8.....	2,608	5,186	5,245	10,431	10,430	1		24	2,341
ward 9.....	4,296	8,913	8,712	17,625	17,619	6		28	3,988
ward 10.....	4,070	8,403	8,627	17,030	17,027	†3		21	3,640
ward 11.....	4,721	11,815	11,757	23,572	23,570	†2		13	4,825
ward 12.....	2,680	6,775	6,244	13,019	13,016	3		13	2,997
ward 13.....	3,996	8,980	9,324	18,304	18,303	1		25	3,642
ward 14.....	3,948	13,083	12,212	25,300	25,299	1		4	4,824
ward 15.....	3,473	6,774	7,849	14,623	14,623			36	3,191
ward 16.....	2,387	5,238	5,982	11,220	11,220			32	2,373
ward 17.....	2,427	6,029	5,797	11,826	11,826			26	2,536
ward 18.....	3,063	7,117	8,366	15,483	15,467	16		6	2,927
ward 19.....	2,662	5,891	6,027	11,918	11,918			17	2,570
ward 20.....	4,370	10,366	10,045	20,411	20,401	10		23	3,910
ward 21.....	3,189	7,965	7,829	15,794	15,789	§5		8	2,685
ward 22.....	2,892	6,762	6,704	13,466	13,466			9	2,674
ward 23.....	2,221	5,114	4,920	10,034	10,034			33	2,198
Total	312,948								
Oak Creek	359	1,078	879	1,957	1,957			5	477
S. Milwaukee, city:									
ward 1.....	268	516	496	1,012	1,012				
ward 2.....	239	614	533	1,147	1,147				
ward 3.....	354	997	844	1,841	1,841				
ward 4.....	234	706	578	1,284	1,284				
Total	5,284							17	1,302
Wauwatosa	2,304	7,102	4,030	11,132	11,115	16	1	2,446	1,674
Wauwatosa, city:									
ward 1.....	208	439	474	913	913				
ward 2.....	131	278	345	623	623				
ward 3.....	160	374	403	777	777				
ward 4.....	128	285	315	600	600				
Total	2,913							20	433
Total	76,871	184,328	179,393	363,721	363,035	685	1	3,051	77,541

*3 Chinamen, 1 Japanese.

†4 Chinamen.

‡2 Chinamen.

§1 Chinaman.



MILWAUKEE SCENE.

CARROLLVILLE.

Carrollville, Milwaukee Co., is an unincorporated village of about 300 inhabitants 73 miles from Chicago and 13 miles from Milwaukee. Good freight and passenger accommodations. Telephone and telegraph. Electric Railroad connections. American Express.

This village is well supplied with shade trees; is well drained. Such raw materials as vegetables and good brick clay can be supplied in the vicinity of the village and other raw material can be shipped in at reasonable transportation rates. Plenty of help can be procured. Coal is shipped by boat from Chicago, Indiana, Ohio, etc. It is supplied with two hotels and a general store.

About three-fourths of the land of the surrounding country is improved. The soil is a clayey loam.

CUDAHY.

Cudahy, Milwaukee Co., is a Milwaukee suburban village having a population of 2,556, located on C. & N. W. Ry., 78 miles from Chicago and 7 miles from Milwaukee. Telephone and telegraph. American Express. Excellent freight and passenger facilities.

This village is located on the shore of Lake Michigan and possesses about the same natural advantages for a manufacturing

center that the larger places on the lake possess. Raw materials can be shipped in at reasonable transportation rates, and plenty of help procured from Milwaukee. The village is supplied with a vinegar factory, implement factory, a packing house, machinery factory, automobile and carriage factory, cooperage factory, boiler and engine factory, a drug store, 7 groceries, 1 hardware, 1 department, 2 dry goods stores, 3 physicians, 2 lawyers, a public school and three parochial schools. The streets of the city are well kept, well drained, provided with good walks, shade trees, etc.

The land surrounding the village is a rich clayey loam, all improved and is excellent for general farming or market gardening.

HALE'S CORNERS.

Hale's Corners, Milwaukee Co., is an unincorporated village of about 250 people located on an electric railroad 5 miles from West Allis. Telephone and telegraph.

This is a summer resort village nearly surrounded by a beautiful chain of lakes abounding in bass, pickerel and other fresh water fish. A bakery is needed. The village is supplied with two groceries, a hardware, a flouring mill, 2 hotels, 2 boarding houses, blacksmith shops, a general store, farm implement dealers, barbers, shoe dealers, 2 meat markets, a physician, a public and a parochial school.

The soil of the farming land surrounding is a black clayey loam. The land is well improved.

MILWAUKEE.

Milwaukee, Milwaukee Co. Population in 1905, 312,948. The city is located on a series of bluffs on the west shore of Lake Michigan, 85 miles north of Chicago. It is on the lines of the Chicago & Northwestern Ry., the Chicago, Milwaukee & St. Paul Ry. and the Wisconsin Central Ry. Of the great railway systems operating between the lake district and the east, the Grand Trunk and the Pere Marquette railways operate all the year from Milwaukee a fleet of six car ferries with a capacity of 30 cars each. The seven great trunk lines, namely: The New York Central, Erie, Lehigh Valley, Lackawanna, Pennsylvania, Baltimore & Ohio, and the Canadian-Atlantic railways, reaching from the Atlantic coast westward, own and operate extensive fleets between their western termini and Milwaukee. Of the independent steamship lines, the Goodrich Transportation Company with a fleet of 9, the Barry Bros. Transportation Company with a fleet of 3, the Crosby Transportation Company with two steamers and one car ferry, and the Michigan Salt Transportation Company with two freight and passenger boats, operate all the year between Milwaukee and Lake Michigan ports. During the season of navigation the Lake Michigan and Lake Superior Transportation Company operates between Milwaukee and points on Lake Superior to Duluth. Telegraph: Western Union and Postal. Express companies: Adams, American, National, Pacific, United States and Wells Fargo.

The beautiful location of Milwaukee on the heights overlooking Lake Michigan, tempered against the extremes of heat and cold by the large body of water, its uniformly well paved and shaded

streets, the metropolitan size and character of its business structures, stately public buildings and churches, magnificent public school system and institutions for higher education have made Milwaukee one of the most popular of the large cities of the country. The city possesses a magnificent public library, an art gallery and public museum. Seven fine parks, placed under the control of a park board created by the legislature, are located in advantageous parts of the city overlooking and adjoining the lake or rivers. A system of drives, connecting all these parks, has been planned and will soon be built.

The educational system of the city is a most comprehensive one, consisting of nearly sixty schools and three large high schools. In addition to the public schools there are many parochial and private schools, about two-fifths of the school children being enrolled in the latter institutions. In Milwaukee-Downer college, the city possesses one of the oldest colleges for women in the country. There are also located in Milwaukee the largest of the state normal schools, 3 theological seminaries, the Wisconsin Conservatory of Music and two medical and dental colleges.

With churches and religious institutions, the city is well supplied. There are over 140 churches representing all denominations. In addition to these, there are prosperous branches of the Young Men's Christian Association and the Young Women's Christian Association, both of which own large and finely equipped buildings.

Milwaukee ranks pre-eminently as a natural manufacturing center. It is one of the great manufacturing cities of the country. To its advantages of location, invigorating climate, an abundant supply of purest water, nearness of the iron mines and forests, and its superior transportation facilities, both by rail and by water, together with the indomitable energy and progressive spirit of the people are in a large measure due the rapid growth of manufacturing. In 1900, the value of Milwaukee's manufactured products was \$110,854,102. In 1905 this amount had increased to \$138,881,545, a gain of 25.3% in only five years. During the same years the capital invested in manufacturing establishments increased from \$105,503,870 to \$165,929,641, a gain of 57.3%. In 1905, the total number of salaried officials, clerks and wage-earners was 48,646 receiving annually in salaries and wages \$26,779,509. Considering wage-earners alone, the annual average earnings per individual increased nearly 16% from 1900 to 1905.

These statistics of production and employment are confined to those establishments having a product of \$500 and over, thus excluding neighborhood industries and hand and building trades. These statistics include only those industries located within the corporate limits of the city, thus excluding many of the largest manufacturing plants in "Greater Milwaukee." The statistics of the Merchants and Manufacturers Association which include these industries show a total capital of \$194,485,440, number of employees 88,362 and \$285,435,941 as the value of the products in 1905. The population of "Greater Milwaukee" is approximately 340,000.

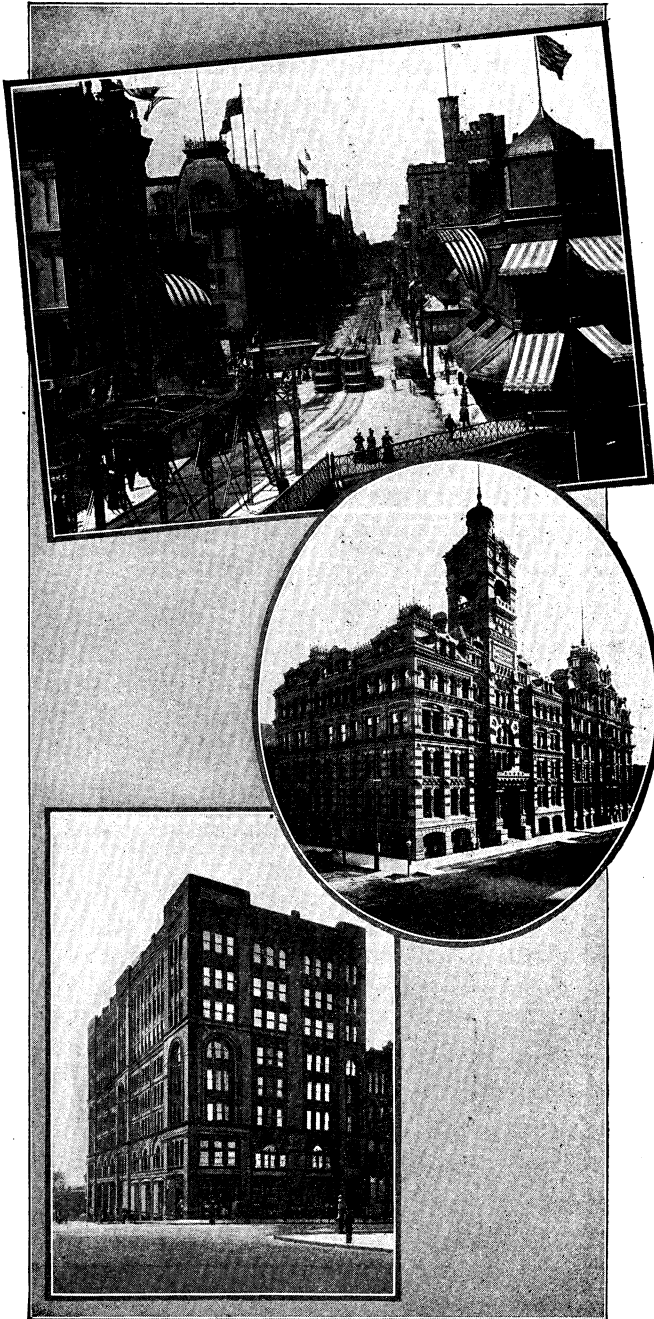
Milwaukee is the logical wholesale trading center for a large part of the country. Its transportation facilities assure prompt and cheap delivery. Its jobbing houses rank among the largest and most complete in the west. In 1905 the city's jobbing trade amounted to \$406,311,596, to which figure it has grown from only \$182,803,727 in 1895.

Milwaukee is one of the principal lake ports, its tonnage for arrivals and clearance being exceeded only by the harbors of Chicago and South Chicago which are reputed as one and by Duluth. In the number of vessels it exceeds Duluth. In 1905, the tonnage for Milwaukee was, arrivals, 6,466,018 tons; clearances, 6,435,178 tons. Milwaukee is the greatest coal distributing point of the northwest. Coal receipts in 1905 were 3,097,711 tons.

What is most needed by Milwaukee to handle its rapidly growing manufacturing and commercial interest are increased transportation facilities. More railroads and additional carferries are imperative for the city's future greatness, thus directing commerce through Milwaukee across the lake rather than the long trip around it.

Of equal importance to Milwaukee is the formation of closer ties between that city and the state and the northwest. Especially the state of Wisconsin must be made to feel a deeper interest in Milwaukee with whose prosperity it is so intimately connected. The city must be more extensively known, not only as a center of education, art, and all that ministers to the higher life, but as a great commercial and industrial metropolis, the market of the northwest.

The most progressive spirit in Milwaukee is represented by the Merchants and Manufacturers Association and various Business



MILWAUKEE SCENES.

Men's and Advancement Associations. Through the efforts of these organizations several large industries have been induced to locate there. It is also largely due to these bodies that Milwaukee has become one of America's great convention cities. The name Milwaukee is derived from an Indian word meaning, "The great council place." These associations have also undertaken the building of an immense auditorium for the city at a cost of \$500,000, of which \$250,000 were raised by popular subscription. Every consideration is shown the prospective resident or business man and the same public spirit prevails in all that is destined to up-build Greater Milwaukee.

NORTH MILWAUKEE.

North Milwaukee, Milwaukee Co. is an incorporated village having a population of 1,236 located on the C. M. & St. P. Ry.; is a suburb of Milwaukee; telegraph and telephone; good freight and passenger service; electric railway connections with other cities; U. S. and Nat. Express.

Coal shipped from Ohio, Indiana and Illinois is the principal fuel. Such raw material as clay, vegetables and fruit can be supplied in the immediate vicinity while others can be procured at low transportation rates. Plenty of help can be secured. Any factory using such raw materials as wood and iron is best suited for the place. The city is supplied with an electric light plant, a bank, drug store, 2 groceries, 2 hardwares, 1 department store, 1 dry goods store, 2 lumber and coal yards, 2 barber shops, 1 plumber establishment, 5 hotels, 8 boarding houses, a public school employing 6 teachers, 2 physicians, and 1 lawyer. The village has excellent parks, wide streets, cement walks, libraries, museums, etc.

SOUTH MILWAUKEE.

South Milwaukee, Milwaukee Co., is an incorporated city having a population of 5,284 located on Lake Michigan on the C. & N. W. Ry., 10 miles from Milwaukee and 75 miles from Chicago; facilities for the receipt and shipment of freight are the best; passenger service good; electric railway; telephone and telegraph; American Express.

This city is a suburb of Milwaukee and possesses all the natural elements necessary for a manufacturing center that is possessed by other large cities located on Lake Michigan. Such raw materials as clay, sand and stone can be supplied from the immediate vicinity, and the railroad and Lake Michigan afford excellent facilities for procuring other raw materials at reasonable transportation rates. Coal is shipped from Ohio, Indiana and Illinois. Plenty of help can be procured. Almost any kind of manufactur-

ing establishment would do well here. The place is in need of a first class hotel, a brick yard and another general foundry. It is already supplied with a bank, 2 drug stores, 10 groceries, 2 hardwares, 2 department stores, 5 dry goods stores, 3 shoe stores, 1 jewelry store, 3 coal yards, 2 mason supply houses, one lumber yard, 1 ice dealer, 1 photographer, 5 physicians, 3 dentists, and a public school employing 15 teachers.

Every manufacturing establishment in the city is being operated to its full capacity. Improvements (by way of dwellings, factories, sewers, water mains, streets, sidewalks, etc.), were inaugurated during the last year amounting to nearly \$400,000. Contemplated improvements for the coming year will exceed this amount. The dredges, wrecking cranes, pile drivers, etc., being used in the construction of the Panama canal were made in South Milwaukee. This city is connected with Milwaukee, Racine, Kenosha and Waukesha by an electric railroad and a new line is now being constructed to Chicago.

All the land surrounding the city is improved and affords excellent opportunities for dairying and market gardening.

WAUWATOSA.

Wauwatosa, Milwaukee Co., is a city of 2,913 inhabitants located on the C. M. & St. P. Ry., adjacent to Milwaukee and about 87 miles from Chicago. Good freight and passenger facilities. Telephone and telegraph. Electric railroad connections. American Express.

Coal is the fuel used. A canning factory is best suited for the place. Plenty of help can be procured. The city is supplied with an electric light plant, a gas plant, drug store, 2 groceries, 1 hardware, 1 general store, 3 meat markets, 1 furniture store, a barber shop, harness shop, tin and repair shop, an electric supply shop, 2 shoe repair shops, 2 printing establishments, 2 feed stores, a lumber yard, sanitarium, a hotel, 3 boarding houses, 6 physicians, park, public library, and an excellent high school system.

The land surrounding the city is well improved, the soil a clayey loam and very fertile. The country is somewhat hilly.

WEST ALLIS.

West Allis, Milwaukee Co., is an incorporated village having a population of 2,306 located on the C. M. & St. P. and the C. & N. W. railroads and on three electric lines running into Milwaukee and two interurban lines, one leading to Waukesha, the other to Muskego lake and will be extended to Lake Geneva; is 2 miles from Milwaukee, 87 miles from Chicago. Telephone and telegraph. First class freight and passenger facilities. American, National and United States Express.

Coal is shipped from Illinois, Indiana and Ohio. The village is supplied with water from artesian wells and from the water

mains of the city of Milwaukee. Plenty of help can be secured from Milwaukee, being 20 minutes ride from the city at a four cent fare. Such raw materials as fruit, vegetables, clay for brick, sand, and building stone, can be supplied here, and other raw materials can be procured at a very low transportation rate. Timber and iron can be procured from the northern part of the state, lead and zinc from the southwestern part, cotton from the south, etc. Two new railroads are soon to be built through the city, the Wisconsin Central and the Milwaukee Southern. The city is supplied with a bank, 2 drug stores, 6 groceries, 3 hardwares, 2 department stores, 2 dry goods stores, 4 barber shops, 1 gents furnishing store, 2 lumber yards, 2 coal and wood yards, 2 flour and feed stores, 3 candy and confectionery stores, 4 meat markets, 1 machine shop employing 5,000 men, a steel tank company, and a chain belt factory, each employing 250 men, and a machine factory, casting shop, sash, door and blind factory, and a corn husker factory employing in the aggregate 500 men. Most of the employes working in these shops reside in Milwaukee. When the Allis-Chalmers Co. complete their shop, the village of West Allis will have the largest machine shops in the world. This village contains the state fair grounds, and the National Soldiers' Home is adjoining. In the line of business openings, groceries, meat markets and drug stores are best suited for the place.

The surrounding farm lands are almost wholly devoted to market gardening and truck farming.

WHITEFISH BAY.

Whitefish Bay, Milwaukee Co., is a suburban village of the city of Milwaukee having a population of 527 located on the C. & N. W. Ry., 7 miles from Milwaukee, and 92 miles from Chicago. Good freight accommodations. 8 passenger trains daily. Telephone and telegraph. Electric railroad to Milwaukee. American Express.

Whitefish Bay is a suburb of Milwaukee and can be made a fine summer resort. A summer hotel is needed here. A cement block factory is best suited for the place. Labor would have to be procured from other cities. Coal is shipped from Illinois, Ohio, etc. The village has a grocery, 1 hardware, a public school, 1 physician, and a lawyer.

The soil in this locality is good and nearly all the land suitable for farming purposes is improved.

MONROE COUNTY.

Monroe county is situated in the west central part of the state. The area is 915 square miles. The population in 1905 was 33,730, being a gain of 1,160 over the census returned of 1900. Of this population only 4,710 persons were foreign born, Germans being in the majority. In 1890 the total farm area was 382,484 acres, of which only 180,210 acres had been improved. In 1905 the total farm acreage was 457,552 acres, of which 210,767 acres had been improved. The value of this land, including improvements, has increased from \$5,265,880 in 1890 to \$11,823,143 in 1905, an increase of 105% in 15 years. The northern part of the county consists, to a large extent, of swampy lands drained by the Lemon-weir river. These low lands consist mainly of hay meadow and tamarack swamp, separated by low hills and ridges. The southern half of the county is rough and hilly, consisting of high rolling ridge land intersected in all directions by deep ravines and valleys. There are many precipitous cliffs and steep ridges rising several hundred feet in height. The soils in the northern two-thirds of the county are mainly sandy and sandy loams, through which occur occasional irregular areas of humus soils composed mainly of muck and peat. The soil in the southern one-third of the county is mainly clayey loam of a light and medium variety. The tops of the ridges are strewn with irregular boulders of flint. Banks of flinty gravel occur along many of the stream channels, especially in the southern half of the county. The chief farm products and the acreage devoted to each in 1890 and 1905 were as follows:

	Acreage in 1890.	Acreage in 1905.
Wheat	20,643	7,146
Oats	31,530	50,615
Barley	2,319	4,486
Rye	5,843	5,991
Corn	15,972	20,725
Hay	37,386	51,797

In 1905 there were in the county 4 cheese factories, 21 creameries and 8 skimming stations. A substantial source of farm income is the culture of berries. While there is a considerable

acreage of unimproved land in the county it is owned in connection with the improved land and does not exist in any large separate tract. The prices for this unimproved land ranges from \$3 to \$10 per acre according to the nature and condition of the land. Improved farms range from \$20 to \$125 per acre. Sparta is the county seat. The following table shows the population statistics of the local political division of the county in 1905:

MONROE COUNTY.

TOWNS, CITIES AND VILLAGES.	Families.	AGGREGATE POPULATION.			COLOR.			E. soldiers and sailors.	Militia.
		Male.	Female.	Total.	White.	Colored.	Indians.		
Adrian	125	338	283	621	621	.....	.....	6	135
Angelo	164	338	323	661	660	1	.....	8	102
Byron	178	456	384	840	840	.....	.....	11	137
Clifton	189	500	423	923	923	.....	.....	4	179
Glendale	211	539	468	1,007	1,007	.....	.....	12	156
Kendall, village	115	274	261	535	535	.....	.....	13	101
Grant	110	280	214	494	494	.....	.....	11	78
Greenfield	169	376	318	694	694	.....	.....	7	125
Jefferson	215	650	618	1,268	1,268	.....	.....	4	203
Cashton, village	154	355	318	673	673	.....	.....	4	130
Lafayette	91	208	202	410	404	6	.....	1c	72
La Grange	205	602	600	1,202	878	.....	324	13	139
Leon	163	443	361	804	804	.....	.....	2	192
Lincoln	196	456	470	926	925	1	.....	17	159
Little Falls	253	645	590	1,235	1,235	.....	.....	11	209
New Lyme	57	155	126	281	281	.....	.....	.....	51
Oakdale	153	352	354	706	7	6	.....	8	119
Portland	232	630	520	1,150	1,149	1	.....	2	212
Ridgeville	163	485	406	891	891	.....	.....	5	157
Norwalk, village	125	223	252	475	475	.....	.....	7	87
Scott	60	145	126	271	271	.....	.....	6	48
Sheldon	161	455	380	835	835	.....	.....	7	182
Ontario, village	27	47	57	104	104	.....	.....	4	21
Sparta	290	808	674	1,482	1,482	.....	.....	18	241
Sparta, city:									
ward 1.....	209	428	517	945	937	8	.....	.....	.....
ward 2.....	265	426	545	971	957	14	.....	.....	.....
ward 3.....	243	487	554	1,041	1,041	.....	.....	.....	.....
ward 4.....	223	408	442	850	843	7	.....	.....	.....
Total, city...3,807									96
Tomah	154	430	370	800	800	.....	.....	3	153
Tomah, city:									
ward 1.....	211	394	475	869	867	*2	.....	.....	.....
ward 2.....	284	515	559	1,074	1,074	.....	.....	.....	.....
ward 3.....	251	515	550	1,065	1,065	.....	.....	.....	.....
Total, city...3,008									35
Wellington	206	592	486	1,078	1,078	.....	.....	14	177
Wells	119	364	332	696	696	.....	.....	2	136
Wilton	162	472	408	875	875	.....	.....	3	176
Wilton, village	110	255	256	511	511	.....	.....	9	96
Total	6,243	15,046	14,217	29,263	28,899	40	324	352	4,985

*2 Chinamen.

CASHTON.

Cashton, Monroe Co. Population, 673. An incorporated village located on the Viroqua branch of the C. M. & St. P. Ry., in Jefferson township, in the southwestern part of the county, 18 miles from Sparta, the county seat, 44 miles from La Crosse, 124 miles from Madison, 190 miles from Milwaukee and 265 miles from Chicago. United States Express. Telegraph and telephone. Shipping facilities and passenger service fair.

The village has wide streets, some cement walks, shade trees in the resident part, good substantial brick business blocks, many fine residences and well kept lawns, water works, volunteer fire department, is lighted by electricity, has a bank, 1 drug store, 1 grocery and feed store, 3 hardware and 5 general merchandise stores, 1 shoe store, 1 furniture and undertaking establishment, 2 good hotels, a \$20,000 high school building, 6 teachers employed, Catholic church, a mile east, Congregational and Lutheran churches, 2 physicians, 2 dentists, a lawyer, 1 restaurant, 2 meat markets, a photographer, 3 blacksmith shops, 2 barber shops, marble shop, brick yard, flour mill, 2 creameries, a large tobacco warehouse, planing mill and interior finishing factory, a steam laundry and 2 grain elevators. A weekly newspaper is published.

Steam power is used. Wood and coal are used for fuel. Wood is obtained from the surrounding country and coal from Milwaukee and Chicago. Fruit and vegetable can be supplied for canning. Brick clay, building sone, sand and a limited amount of hardwood timber can be furnished from the adjacent country. Plenty of help, men and young persons, can be secured in the vicinity. Good location for a cement block factory.

The village is located in one of the best farming sections in the county and 75 per cent of the land is improved. The land is practically all level with a rich clay soil. A fine grade of leaf tobacco is produced and large crops of corn, hay and small grain are raised. Dairying and stock raising are leading occupations of the farmers. The village is a good market for all kinds of farm produce and is a distributing point for a large section of country. Live stock, farm produce and dairy products are the principal shipments.

CATARACT.

Cataract, Monroe Co. An unincorporated village of about 150 inhabitants located in the township of Little Falls, on Big Creek, in the northeastern part of the county, 11 miles north of Sparta, the county seat, banking and shipping point

Has telephone connections, 3 general stores, millinery store, a hotel, boarding house, grade school employing 2 teachers, 2

churches, a physician, a blacksmith shop, berry crate factory, meat market and a creamery.

The village has a small undeveloped water power. Wood is obtained from the surrounding country. Berries and vegetables could be supplied for canning. A limited amount of help can be secured here.

The surrounding country is sandy, but contains many good farms. The low lands are marshy but when drained are valuable farm lands. Dairying is the chief industry. There is a demand here for a cheese factory.

KENDALL.

Kendall, Monroe Co. Population, 535. An incorporated village located on the C. & N. W. Ry., in Glendale township, in the southeastern part of the county, 28 miles from Sparta, the county seat, 52 from La Crosse, 89 from Madison, 162 from Milwaukee and 219 from Chicago. American Express. Telegraph and telephone connections. Good shipping facilities and passenger service.

The village has good streets, shade trees, a bank, 1 drug store, 1 hardware and 4 general stores, furniture store, 1 hotel, 2 boarding houses, good public school employing 5 teachers, 2 physicians, meat market, 2 blacksmith shops, feed mill, grist mill one mile away, 2 farm implement dealers, and a creamery. A weekly newspaper is published.

Some fruit and all kinds of vegetables can be supplied for canning. Clay and hardwood timber are the principal natural products. Plenty of help can be secured here. Good location for broom factory, or a canning factory.

The surrounding country is good for farming and about two-thirds of the land suitable for farming is improved. The land is hilly, but ridges and valleys are alike good for farming and all the very best soil. Dairying and stock raising are the chief industries. The shipments comprise live stock, dairy products and farm produce.

NORWALK.

Norwalk, Monroe Co. Population, 475. An incorporated village located on the C. & N. W. Ry., in southern part of the county, 13 miles southeast of Sparta, the county seat, 37 from La Crosse, 95 from Madison, 177 from Milwaukee and 238 from Chicago. American Express. Telegraph and telephone connection. Good shipping facilities and passenger service.

Is supplied with a bank, drug store, 3 hardware and 4 general stores, shoe store, furniture store, jewelry store, 1 hotel, graded school employing 4 teachers, 4 physicians, Catholic, Evangelical, Lutheran and Methodist Episcopal churches, meat markets, barber shops, blacksmith shops, and a weekly newspaper.

Wood is used for fuel, obtained in the vicinity. Fruit and vegetables can be supplied for canning and the natural products are clay, sand, stone and timber. A limited amount of help can be secured to work the entire year. The village needs better hotel facilities.

The country surrounding the village is hilly, but the valleys and ridges are fine farming lands and nearly all improved. The soil in the low lands is a sandy loam and clay on the high lands. Stock raising and dairying are the chief industries.

ONTARIO.

(See Vernon County.)

SPARTA.

Sparta, Monroe Co. Population, 3,807. The judicial seat of Monroe county is located in western part of the county on the C. M. & St. P. and the C. & N. W. Rys., and on the La Crosse river, 26 miles from La Crosse, 108 from Madison, 172 from Milwaukee and 247 from Chicago. American and United States Express. The very best shipping facilities and passenger service.

The city has several miles of paved streets, cement and brick walks, substantial brick business blocks, beautiful residences, streets arched with large shade trees, numerous artesian wells of mineral water, a complete system of water works and sewerage, an efficient fire department, is lighted by electricity, has 3 banking houses, 3 drug stores, 7 grocery stores, 3 hardware and 6 general stores, 2 laundries, 2 shoe stores, 5 hotels, excellent high and graded public schools employing 18 teachers, Adventist, Catholic, Congregational, Episcopal, Lutheran, Methodist and Norwegian Lutheran churches, a free public library, and an opera house. The state school for Dependent and Neglected children is located here. The manufacturing industries comprise the Sparta Iron Works, Sparta sash and Door Co., the American Cigar Co., warehouses and curing plant, grist mill, cigar factories and creamery. Three weekly newspapers are published.

There is a water power here not all utilized. Coal and wood are used for fuel. Wood is obtained from the surrounding country and coal from Milwaukee and Chicago. Fruit and vegetable can be supplied for canning. Plenty of help can be secured to work the year round.

The city is situated in a good farming country and about all the land suitable for crop raising is improved. The soil is a sandy

loam. This is the best berry section in Wisconsin and no better location can be found for a canning factory using this product. Large quantities of melons and cucumbers are raised and a pickle salting station has been established here for a number of years. Large sections of the hilly lands are used for grazing purposes and thousands of cattle and sheep are kept here during the summer. There are hundreds of acres of land in this section that can be made valuable for the production of small fruits, vegetables, sugar beets, potatoes, etc. Sparta is a good location for a beet factory. Also a good location for a wholesale grocery.

TOMAH.

Tomah, Monroe Co. Population, 3,008. An incorporated city located on the main line of the C. M. & St. P. Ry., and the end of the valley division of the same road, 17 miles northeast of Sparta the county seat, 42 miles from La Crosse, 97 miles from Madison, 155 from Milwaukee and 240 from Chicago. U. S. Express. Telegraph and telephone connections. Good shipping facilities and passenger service.

The city is located in the center of a fertile country, is lighted by electricity, has a fine water works system owned by the city, a volunteer fire department, 2 banks, 3 drug stores, 7 general stores, 3 hardware and 4 dry goods stores, 2 laundries, 6 hotels, high and graded schools employing 15 teachers, parochial schools, churches of the leading religious denominations, 7 physicians, 5 lawyers, a public library, a public hall and an opera house. A government school for Indians is located here. The manufacturing industries comprise the Tomah Peat Co., pickle factory, saw and planing mills, iron works, two sash and door factories, flour mill, and a creamery. The bridge building department of the C., M. & St. P. Ry. is located here and employs about 125 men. Two weekly newspapers are published.

Steam power is used for factories. Wood, coal and peat are used for fuel. Wood and peat are obtained from the adjacent country and coal from Milwaukee and Chicago. Fruit and vegetables can be furnished in large quantities for canning. There is an abundance of clay, sand, peat and timber near the city. Help can be secured here.

The surrounding country is good for farming and not over 50 per cent of the land suitable for crop raising is improved. The soil is a sandy loam in the valleys which produce good crops. This section produces large quantities of berries and vegetables, potatoes, etc. Is a good grazing country and dairying is an im-

portant industry. Good location for a starch, sugar, canning or box factory.

VALLEY JUNCTION.

Valley Junction, Monroe Co. Population, 250. An unincorporated village located at the junction of the C. M. & St. P., and C. St. P. M. & O. Ry's., in the northeastern part of the county, 24 miles from Sparta, 100 from Madison, 157 from Milwaukee and 238 from Chicago. American and United States Express. Telegraph and telephone connections. Good shipping facilities and passenger service.

Has 1 general store, 2 hotels, graded school employing 2 teachers, 2 churches, 1 physician, grain elevator, feed mill, meat market, blacksmith shop and creamery. A weekly newspaper is published. Opening for canning factory and pickle salting station.

Most of the surrounding country is swampy, which will be valuable farm lands when thoroughly drained. The country is covered with large beds of peat, ranging from 2 to 12 feet in depth. As the country develops this village will grow in importance owing to its location and excellent railway facilities.

WARREN.

Warren, Monroe Co. Population, 275. An unincorporated village on the C. St. P. M. & O. Ry., in the northeastern part of the county, 31 miles from Sparta, 55 from La Crosse, 107 from Madison, 199 from Milwaukee and 245 from Chicago. American Express. Telegraph and telephone connections. Good shipping facilities and passenger service.

The village has clean streets, good sidewalks, an abundance of shade trees, electric light plant, 1 general store, 1 hotel, 1 boarding house, graded school employing 3 teachers, 1 physician, a flouring mill, 1 manufacturing and repair shop, creamery, a church, tailor shop, meat market and a weekly newspaper.

Wood is used for fuel obtained from the adjacent territory. Fruit and vegetables can be supplied for canning. Clay, sand, stone, peat and timber are the natural products. Help can be secured in the vicinity. A canning factory and a good hotel is needed.

The surrounding country is good for farming and about 50 per cent of the land suitable for crop raising is improved. The soil is a sandy loam and 75 per cent of the country is level and free from stone.

WILTON.

Wilton. Monroe Co. Population, 511. An incorporated village located in Wilton township, on the C. & N. W. Ry., in the south central part of the county, 18 miles southeast of Sparta, 45 from La Crosse, 90 from Madison, 172 from Milwaukee and 228 from Chicago. American Express. Telegraph and telephone connections. Good freight facilities and passenger service.

The village has good streets and walks, fine business blocks and residences, a bank, 1 drug store, 2 hardware and 6 general stores, 3 hotels, high school employing 6 teachers, 2 physicians, Catholic, Lutheran and Methodist churches, furniture store, meat market, jewelry store, harness shop, blacksmith shop, flour mill, wagon factory and repair shop and 2 creameries. A weekly newspaper is published.

There is a small water power here not utilized. Wood is used for fuel, obtained from the adjacent country. Fruit and vegetables can be furnished for canning. An opening for a canning factory or woodenware factory. Brick, clay, sand, stone and timber are the natural products. There is a first class location here for a brick yard. Help is plenty in the village and vicinity.

The land surrounding the village has a good clayey soil, a little hilly, but no sandy or swamp lands. It is a good farming section and about 75 per cent of it is improved. The village is a good market for all kinds of farm produce and ships a large amount of live stock.

OCONTO COUNTY.

Oconto county is located in the northeastern part of the state bordering on Green Bay. The area is 1,080 square miles. The population in 1905 was 24,580, a gain of 3,706 over the census returns in 1900. Nearly one-fourth of the population is foreign born, of which number Germans represent nearly two thousand. Other nationalities represented by large numbers of settlers are Canadians, Poles and Danes. Oconto county was at one time an immense forest and lumbering is still its principal industry. While agriculture has grown rapidly it has not kept pace with the retreating forests and where the timber has been removed, thousands of acres of tillable cut-over lands await the settler. The total farm area in 1905 was 227,354, or less than one-third of the county, and of this acreage only 97,474 acres were improved. In 1890 the total farm area was 135,630 acres with 46,588 acres improved. The greatest increase has been in

the valuation of the farms and improvements which grew from \$2,482,810 in 1890 to \$7,695,403 in 1905, a gain of over 185 per cent. With the exception of an area adjacent to Green Bay, the county is generally rough and hilly, especially in the northern part. The topography has been modified by glacial and stream erosion. The soils of the county are very largely clayey loams. A strip of sand and sandy loams about eight miles wide extend through the county from the southwest to northeast. There are several irregular areas of sand and sandy loam in the southeastern part of the county in the vicinity of Green Bay. Numerous areas of humus soils, composed mainly of muck and peat, occur in different parts of the county. There are some parts of the county where the soil is rather stony. The chief crops and their acreage in 1890 and 1905 were as follows:

	Acreage in 1890.	Acreage in 1905.
Wheat	3,387	4,370
Oats	10,357	23,190
Barley	225	1,924
Rye	1,007	2,093
Corn	1,080	2,321
Hay	15,800	32,490

In 1905 there were 17 cheese factories and 5 creameries in the county. The soil of Oconto county is well adapted to dairying and this industry is destined to occupy a position of much greater importance in the future. The sandy loams are natural potato soils and promise a good yield. Owing to the large amount of cut-over lands which can be had at reasonable prices, an excellent opportunity is offered for sheep pasturing. The price of unimproved lands which can be made tillable, ranges from \$5 to \$12 per acre. Improved farm lands average about \$40 per acre. A considerable portion of the western part of the county is occupied by the Menominee Indian Reservation. Oconto is the largest city and county seat. The population of the cities, villages and towns of the county for 1905 was as follows:

OCONTO COUNTY.

TOWNS, CITIES AND VILLAGES.	Families.	AGGREGATE POPULATION.			COLOR.			Ex-soldiers and sailors	Militia.
		Male.	Female.	Total.	White.	Colored.	Indians.		
Armstrong	112	359	255	614	612	.....	2	4	158
Brazeau	107	334	264	598	593	.....	.....	1	103
Breed	54	167	136	303	333	.....	.....	1	61
Chase	181	624	532	1,156	1,156	.....	.....	7	165
Gillett	194	622	499	1,121	1,120	1	.....	6	215
Gillett, village	101	271	243	514	493	.....	21	4	108
Howe	170	507	466	973	973	.....	.....	3	178
Lena	221	652	623	1,275	1,275	.....	.....	3	243
Little River	209	625	580	1,205	1,205	.....	.....	4	191
Little Suamico	225	644	572	1,216	1,216	.....	.....	3	181
Maple Valley	205	537	445	982	582	.....	.....	4	172
Menomonic Indian Res- ervation, part of.....	71	162	147	309	3	.....	*306	8	.....
Morgan	119	342	325	667	667	.....	.....	6	111
Oconto	221	614	550	1,164	1,164	.....	.....	6	204
Oconto, city:									
east ward	316	814	769	1,583	1,581	2	.....	.....	.....
north ward	215	560	516	1,076	1,076	.....	.....	.....	.....
west ward	198	521	508	1,029	1,026	.....	3	.....	.....
south ward	413	1,031	1,003	2,034	2,034	.....	.....	.....	.....
Total, city.....	5,722	.....	.....	.....	.....	.....	.....	37	1,162
Oconto Falls	131	351	328	679	679	.....	.....	2	107
Oconto Falls, village..	272	666	635	1,301	1,301	.....	.....	3	251
Pensaukee	350	940	834	1,774	1,774	.....	.....	25	272
Spruce	202	595	511	1,106	1,106	.....	.....	2	182
Stiles	180	526	458	984	984	.....	.....	7	185
Underhill	130	409	366	775	775	.....	.....	.....	124
Wheeler	34	88	54	142	142	.....	.....	4	34
Total	4,631	12,961	11,619	24,580	24,245	3	332	140	4,346

*Indians not taxed.

GILLETT.

Gillett, Oconto Co., is an incorporated village. Population, 514. Located on C. & N. W. Ry., 23 miles from Oconto, 161 miles from Milwaukee and 52 miles from Green Bay. Telephone and telegraph. Good facilities for receipt and shipment of freight. Fair passenger facilities. American Express.

Wood for fuel is procured from the surrounding forests. Such raw materials as peas, clay, timber and sand can be supplied. An excelsior factory is best suited for the place. Plenty of help can be procured for this purpose. The village is supplied with an electric light plant, a bank, drug store, 4 groceries, 3 hardwares, 3 drygoods stores, 2 blacksmith shops, flour mill, pail factory, planing mill, sawmill, sash and door factory, tailor shop, newspaper, furniture store, harness shop, meat markets, restaurants, opera house, 3 hotels, a livery stable, a fancy woodworking establishment, 5 churches, a good graded school, machine shop, 4 physicians and 3 attorneys at law.

Some of the best farm lands of the state are located here. The land is level and practically free from sand, stone and marshes.

LENA.

Lena, Oconto Co., is an unincorporated village of about 500 people; is located on the C. M. & St. P. Ry., 144 miles from Milwaukee, 229 miles from Chicago and 32 miles from Green Bay. Has good freight and passenger facilities. Telegraph and telephone. American Express.

Wood for fuel is procured from the immediate vicinity. Coal is shipped from Green Bay. Such raw materials as clay, sand, vegetables, and an abundance of timber can be supplied, and about 200 laborers procured. A pea canning or woodworking factory is best suited for the place. A first-class hotel is needed. An electric light plant may prove a profitable investment. The village is supplied with a bank, drug store, a grocery, 2 hardware stores, 5 general stores, 2 meat markets, 1 furniture, and 1 jewelry store, 4 hotels, 2 physicians, a graded school of 4 departments, 2 elevators, flour and planing mill.

About two thirds of the land in this vicinity suitable for farming is improved. It is all level and nearly free from stone, sand and swamps.

OCONTO.

Oconto, Oconto Co., is a city having a population of 5,722 located on the C. & N. W. and the C. M. & St. P. railroads 147 miles from Milwaukee, 232 miles from Chicago and 29 miles from Green Bay; excellent freight and passenger facilities. Telephone and telegraph. United States and American Express.

Plenty of labor can be procured for factory work. Such raw material as aluminum, clay, sand, limestone, fruit, vegetables, fish and an abundance of timber can be supplied. A woodworking establishment or a tannery is best suited for the place. The city is provided with an electric light plant, 2 banks, 4 drug stores, 15 groceries, 2 department stores, 1 laundry, 2 large sawmills, pea canning factory, post mill, brewery, foundry, 3 jewelry stores, 3 agricultural implement establishments, 3 shoe stores, 3 clothing stores, 2 flour and feed stores, 3 millinery stores, 2 coal and wood yards, 3 confectionery stores, 6 hotels, several boarding houses, 5 physicians, 5 lawyers, a high school employing 18 teachers, 3 weekly and 1 semi-weekly newspaper, a splendid public library and an armory. The streets are macadamized, and have an abundance of shade. The city also has a public park.

Some of the best lands in Wisconsin are in close proximity to Oconto, three-fourths of which is improved. There is some sandy land, but most of it is level, free from stone and marshes.

OCONTO FALLS.

Oconto Falls, Oconto Co., is an incorporated village having a population of 1,301; is located on the C. & N. W. Ry., 169 miles from Milwaukee, 14 miles from Oconto and 43 miles from Green Bay. Telephone and telegraph. Three passenger and two freight trains daily each way. American Express.

Two undeveloped water powers can be procured, one having a 28 foot fall, the other 34. Help can be obtained in the village and surrounding country. Such raw materials as small fruit, vegetables, clay, sand, limestone and an abundance of timber can be obtained from the immediate vicinity. Any establishment that can utilize these materials is suited for this place. The village is supplied with a bank, 2 drug stores, an electric light plant, 6 groceries, 3 hardwares, 5 drygoods stores, a paper mill, 2 pulp mills, 1 sulphite mill, 2 machine shops, 1 pail factory, 1 grain elevator, 2 cigar factories, a newspaper, 2 hotels, 2 boarding houses, 5 physicians, a high school employing 10 teachers, 5 churches, and 3 public halls. This village could be made a summer resort.

About one half the land in this section of the state suitable for farming is improved. The soil is good for any kind of farming; is free from stone and swamps.

SOBIESKI.

Sobieski, Oconto Co., is a new village just being laid out. Population, 200. Located on C. M. & St. P. Ry., 16 miles from Green Bay and 128 miles from Milwaukee. Telephone and telegraph. Good freight and passenger facilities.

This village can be made a summer resort. A canning factory and flouring mill is best suited for the place. Such raw materials as clay, sand, timber, stone, small fruit and vegetables can be supplied, and plenty of help secured. Wood for fuel is abundant in the immediate vicinity and coal can be shipped from Green Bay. The village is supplied with 2 grocery and 2 general stores, an agricultural implement warehouse, a grain, hay and potato warehouse, a blacksmith shop and 2 hotels. A first-class hotel is needed.

About one-third of the land in this locality suitable for farming is improved. The soil is good and well adapted for general farming.

SURING.

Suring, Oconto Co., is an unincorporated village of about 300 inhabitants; located on the C. & N. W. Ry., 168 miles from Milwaukee, 32 miles from Oconto and 62 miles from Green Bay. Telephone and telegraph. Good facilities for receipt and shipment of freight. American Express.

Such raw materials as small fruit, vegetables, clay, sand and timber can be supplied. A woodworking or canning estab-



NORTHERN WISCONSIN IS THE HUNTERS PARADISE.

ishment is best suited for the place. Any amount of help can be procured from the village and surrounding country. The village is supplied with a drug store, 4 general stores, 1 confectionery, 1 jewelry store, 1 millinery store and a meat market.

About one third of the land in this locality suitable for farming purposes is improved, is practically all level and free from stone. There is some low land here. The soil is a clayey loam and excellent for general farming purposes.

ONEIDA COUNTY.

Oneida county is located in the north-central part of the state. The area is 900 square miles. The population in 1905 was but 11,234, a gain of 2,359 over the census of 1900. Over one-fourth of this population is of foreign birth, Germans, Canadians and Swedes predominating. Lumbering is the principal industry of the county, agriculture being as yet but little developed. The total farm area in 1905 was but 57,369 acres, of which only 9,168 acres had been improved. This total farm area is but 10 per cent of the available land of the county, the vast tracts of cut-over lands offering excellent inducements to settlers. The value of the land now under cultivation including the improvements is \$744,625. The surface of the county has been shaped very largely by glacial erosion and deposition. The northern part of the county has a pitted surface due to the irregular manner in which the glacial drift was distributed. The soil of the county, commencing several miles to the east of the Wisconsin river and extending westward to the Tomahawk river is a sandy loam, which in the river valleys shades into a sandy soil. In the southeastern and southwestern parts of the county the soil is a clayey loam of the lighter varieties, and in places is rather stony, but not to such an extent as to permanently interfere with cultivation. There are numerous irregular areas of humus soils scattered throughout the county. In the northern and eastern part of the county are several small lakes. The chief products of the farms are oats, barley and hay. There is but one creamery in the county. The soil in parts of the county will support an excellent dairy industry while other parts are better suited to sheep raising. The range of prices for unimproved lands, such as can be made tillable, is from \$7 to \$12 per acre. The price of good

improved land averages about \$50 per acre. Rhinelander is the largest city and county seat. The population of the local political divisions for 1905 was as follows:

ONEIDA COUNTY.

TOWNS, CITIES AND VILLAGES.	Families.	AGGREGATE POPULATION.			COLOR.			Ex-soldiers and sailors.	Militia.
		Male.	Female.	Total.	White.	Colored.	Indians.		
Cassian	87	214	149	363	340	....	23	2	67
Crescent	63	268	190	458	452	....	6	3	105
Enterprise	25	173	52	225	225	....	....	....	101
Gagen	208	375	357	712	712	....	....	....	72
Hazelhurst	122	451	226	677	677	....	....	4	232
Lynn	45	139	81	220	220	....	....	....	62
Minocqua	165	427	331	758	758	....	....	7	265
Monico	63	239	148	387	387	....	....	1	95
Newbold	42	129	97	226	216	....	....	....	22
Pelican	89	237	192	422	422	....	....	3	58
Pine Lake	43	111	91	202	202	....	....	3	41
Rhinelander, city:									
ward 1	162	501	370	871	871	....	....	....	....
ward 2	180	554	428	982	982	....	....	....	....
ward 3	153	505	355	860	860	....	....	....	....
ward 4	171	408	405	813	813	....	....	....	....
ward 5	191	573	425	998	994	*4	....	....	....
ward 6	200	450	461	911	911	....	....	....	....
Total, city, 5,435								21	1,306
Schoepke	80	201	166	367	362	....	5	4	73
Sugar Camp	51	213	122	335	299	....	36	....	103
Woodboro	22	144	35	179	179	....	....	1	88
Woodruff	53	166	102	268	268	....	....	1	85
Total	2,215	6,471	4,763	11,234	11,160	4	70	50	2,773

*4 Chinamen.

HAZELHURST.

Hazelhurst, Oneida Co., is an unincorporated village of about 400 inhabitants; is located on the C. M. & St. P. and H. S. E. railroads 159 miles from New Lisbon. 65 miles from Wausau and 295 miles from Milwaukee. Telegraph and telephone. Good freight and passenger facilities. U. S. Express.

After the supply of saw timber has been exhausted this town can be easily converted into a most popular summer resort because of the many beautiful fresh water lakes in the surrounding country.

There are only about 25 farms tributary to this village, each having from 10 to 40 acres improved. The soil is a sandy loam and well adapted for general farming.



FOREST SCENE BEFORE THE PIONEER MARRED ITS BEAUTY.

RHINELANDER.

Rhineland, Oneida Co., is a city of 5,435 inhabitants; located on the "Soo" and C. & N. W. railroads, 254 miles from Milwaukee, 213 miles from St. Paul, and 121 miles from Escanaba, Mich. Telephone and telegraph. Good freight and passenger facilities. American and National Express.

A 1,200 horse water power can easily be developed here. Such raw material as sand, stone and all kinds of timber can be supplied and any establishment that can utilize these is best suited for the place. A flour mill is also suited for this city. Any amount of help can be procured. The village is supplied with an electric light plant, 2 banks, 3 drug stores, 7 groceries, 3 hardwares, 2 department stores, 2 dry goods stores, 2 laundries, jewelry stores, blacksmith and machine shops, harness shops, saw mills, brewery, refrigerator factory, paper mill, 3 hotels, several boarding houses, 8 physicians, 8 lawyers, a high school, employing 31 teachers, good parks, excellent streets, an abundance of shade trees, cement sidewalks, etc. Three weekly newspapers are published.

About three fourths of the land tributary to Rhineland suitable for farming is improved. The soil is very fertile, yet there



THIS SHOWS THE PROGRESS THE INDUSTRIOUS PIONEER HAS MADE WITHIN FIVE YEARS.

is some rough land here, some stony, sandy and marshy, while about one fourth is level and free from stone.

THREE LAKES.

Three Lakes, Oneida Co., is an unincorporated village of about 400 people; is located on the C. & N. W. Ry., 256 miles from Milwaukee and 50 miles from Antigo. Telephone and telegraph. Good freight and passenger facilities. American Express.

A 10,000 horse water power can easily be developed here. Wood for fuel is obtained in the immediate vicinity. Such raw materials as clay, sand, stone and all kinds of timber can be supplied, and 125 laborers procured. A box or woodenware factory is best suited for the place. A first-class hotel is also desired. The village is supplied with general and hardware stores, dress-making and millinery establishments, a blacksmith shop, and 2 hotels. This village can be easily made one of the most popular summer resort towns in the northwest, being located on one of a chain of twenty or more beautiful lakes being connected by a

river easily navigable by launches. Fresh water fish of all kinds abound in these lakes, and the forests surrounding them provide excellent hunting for all kinds of wild game.

The soil here is well adapted for farming purpose, 60 per cent of the land suitable for farming being improved.

WOODRUFF.

Woodruff, Oneida Co., is an unincorporated village of about 200 inhabitants located on the C. & N. W., and C. M. & St. P. railroads 279 miles from Milwaukee, 364 miles from Chicago, and 25 miles from Rhinelander. Good facilities for receipt and shipment of freight. Four passenger trains daily. American Express.

Wood procured from the immediate vicinity is the fuel used. A 100 horse water power can be developed here. An abundance of timber, stone, sand and vegetables can be supplied and other raw materials can be procured at reasonable transportation rates. This village is supplied with 2 grocery stores, a drygoods store, barber shop, confectionery, a blacksmith shop, 1 hotel, 2 boarding houses. Hundreds of people from Chicago, Milwaukee and other cities come annually to spend their summer vacations in the lake region of northern Wisconsin. A boat factory and a first-class hotel would do well here. An electric light plant is also desired.

The soil in this section of the state is sandy and but little of the land is improved.

OUTAGAMIE COUNTY.

Outagamie county is located in the northeastern part of the state directly north of Lake Winnebago. The area is 684 square miles. The population in 1905 was 49,015, a gain of 2,768 over 1900. Nearly one-fifth of the population is of foreign birth, of which number about 70 per cent are Germans. About 75 per cent of the county is occupied for farming, 327,669 acres being devoted to that purpose in 1905, of which acreage 206,275 acres were improved. In 1890 the total farm acreage and the amount of improved land were 277,394 acres and 167,506 acres respectively. The valuation of such lands including improvements increased from \$8,603,850 in 1890 to \$17,328,564 in 1905 or practically one hundred per cent.

The surface of the county is rolling except along the rivers and tributaries which break the land into ridges, hills and valleys. About two-thirds of the county is covered with clayey loams derived from the red locustrine clays, similar to the red clay soil in Douglas, Ashland and Brown counties. This is the heaviest soil in the state and of very fine texture making it rather impervious to air and water but with intelligent treatment seeking to establish a more open texture, excellent crops are produced. The northwestern part of the county possesses a light clayey loam through which occur occasional small areas of sand and sandy loams. Irregular areas of humous soils, composed mainly of muck and peat, are found throughout the county. The chief crops and the acreage devoted to each in 1890 and 1905 were as follows:

	Acreage in 1890.	Acreage in 1905.
Wheat	22,009	1,769
Oats	31,478	53,563
Barley	3,957	19,879
Rye	4,191	2,276
Corn	11,908	17,294
Potatoes	2,824	3,392
Hay	37,400	43,584

The county is rapidly developing as a dairy center. In 1905 there were 65 cheese factories, 10 creameries and 4 skimming stations with its borders. The range of prices for unimproved farm lands which can be made tillable, varies from \$15 to \$25 per acre. Unimproved lands of not so good a quality can be had at \$7 per acre. Improved farm lands range in price from \$75 to \$80 per acre. Appleton is the county seat. The following table shows the population of the local political divisions in 1905:

OUTAGAMIE COUNTY.

TOWNS, CITIES AND VILLAGES.	Families.	AGGREGATE POPULATION.			COLOE.			Ex-soldiers and sailors.	Militia.
		Male.	Female.	Total.	White.	Colored.	Indians.		
Appleton, city:									
ward 1.....	730	1,504	1,776	3,280	3,277	.....	3	23	608
ward 2.....	617	1,346	1,552	2,898	2,894	4	.....	29	653
ward 3.....	725	1,573	1,794	3,367	3,350	12	5	14	557
ward 4.....	349	886	953	1,839	1,833	.....	.....	7	270
ward 5.....	674	1,478	1,501	2,979	2,976	3	.....	20	558
ward 6.....	571	1,295	1,342	2,637	2,633	3	1	16	458
Total, city, 17,000									
Black Creek	181	485	456	941	941	.....	.....	1	162
Black Creek, village..	111	244	242	486	486	.....	.....	10	73
Bovina	146	393	283	676	675	.....	1	8	139
Shiocton, village	119	246	245	491	491	.....	.....	11	89
Buchanan	402	1,256	1,041	2,297	2,297	.....	.....	1	439
Center	261	739	627	1,366	1,366	.....	.....	5	235
Cicero	221	618	514	1,132	1,132	.....	.....	4	187
Dale	311	678	629	1,307	1,307	.....	.....	24	266
Deer Creek	190	600	527	1,127	1,127	.....	.....	3	187
Welcome, village	72	164	172	336	336	.....	.....	7	48
Ellington	241	677	593	1,270	1,270	.....	.....	18	259
Freedom	287	815	798	1,613	1,613	.....	.....	4	343
Grand Chute	316	936	829	1,765	1,763	1	1	4	2 9
Greenville	237	702	565	1,267	1,267	.....	.....	10	251
Hortonia	127	350	300	650	650	.....	.....	4	131
Hortonville, village ..	226	457	433	890	890	.....	.....	31	184
Kaukauna	133	399	316	715	715	.....	.....	10	144
Little Chute, village..	226	653	567	1,220	1,220	.....	.....	2	243
*Kaukauna City	1,021	2,547	2,444	4,991	4,990	.....	1	23	954
Liberty	120	315	280	595	595	.....	.....	3	117
Maine	147	364	323	687	685	2	.....	7	129
Maple Creek	134	367	330	697	697	.....	.....	10	163
†New London, city:									
ward 3.....	147	344	331	675	675	.....	.....	.....	113
Osborn	118	301	276	577	577	.....	.....	3	83
Seymour	226	626	559	1,185	1,185	.....	.....	10	209
Seymour, city	262	572	546	1,118	1,117	.....	1	16	2 0
Vandenbrook	120	373	352	725	725	.....	.....	2	111
West Oneida	252	652	564	1,216	42	.....	1174	14	243
Total	10,020	24,955	24,060	49,015	47,803	25	1187	356	9,063

*Wards not given.

†For total see Waupaca county.

APPLETON.

Appleton, Outagamie Co. Population, 17,000. 100 miles from Milwaukee, 127 miles from Madison and 185 miles from Chicago. C. & N. W. and C. M. & St. P. Ry's. Electric railway connections with all cities on the Fox River. The Fox river is navigable to Lake Winnebago. Waterworks. Telephone system. Gas and electric light plants. Western Union and Postal telegraph. American and United States Express. County seat.

The Fox river within the city limits of Appleton develops one of the most extensive water powers in the state of Wisconsin. Nearly all of this power is being utilized by factories but there is sufficient unutilized power for another manufacturing concern. Any kind of manufacturing is suitable for this city. Clay, sand and limestone can be furnished in large quantities.

Vegetables and sugar beets are extensively grown. Owing to its immense water power, Appleton is becoming one of the most important manufacturing cities in the state. In 1905 there were located in this city 108 factories with an aggregate capitalization of \$6,833,493; employing 2,486 wage earners and having an annual product of \$6,672,457. Manufacturing in this city has shown a very rapid growth during the last five years. The principal industries are the manufacture of paper and pulp, toys, felts, knit goods, sash, doors and blinds, furniture and bank fixtures. Appleton is the center of one of the largest paper manufacturing districts in the west. There are two unoccupied manufacturing plants in this city, one a canning factory and the other a watch factory. Appleton is also an educational center being the seat of Lawrence University. There are 29 physicians, 31 lawyers; 100 teachers are employed in the public schools. There are 6 hotels with accommodations for about 500 persons.

BLACK CREEK.

Black Creek, Outagamie Co. Population, 486. An incorporated village located on the Green Bay & Western Ry., in the north central part of the county, 16 miles north of Appleton, 24 miles from Green Bay, 145 miles from Milwaukee and 230 from Chicago. United States Express. Telegraph and telephone connections. Good shipping facilities and passenger service.

The village has good streets covered with crushed stone, shade trees, private park of 5 acres, a volunteer fire department, a hotel, graded public school employing 3 teachers, 5 churches, 2 physicians, bakery, meat market, 3 blacksmith shops, cheese box factory, water tank and casing factory, and a lumber yard.

A good hotel is needed. Good location for canning or shoe factory or flour mill.

There is an undeveloped water power here. Wood is used for fuel, obtained from the surrounding country. All kinds of vegetables can be supplied for canning. There is plenty of clay, sand, peat, stone and timber in the vicinity. Help can be secured in the village.

The adjoining country is good for farming purposes and a large per cent of the land suitable for crop raising is improved. The soil is a clayey loam, the land is rolling and some swampy. Vegetables, small grain, corn and potatoes are the principal crops.

DALE.

Dale, Outagamie Co. Population, 350. An unincorporated village located on the Wis. Central Ry., in the southwestern part of the county, 14 miles west from Appleton, the county seat, 11 miles from Menasha, 26 miles from Oshkosh, 105 miles from Milwaukee and 190 miles from Chicago. Telegraph and telephone. National Express. Good shipping facilities and passenger service.

The village is supplied with a bank, drug store, 1 hardware and 4 general merchandise stores, 3 small hotels, 2 boarding houses, graded school employing 2 teachers, 2 churches, a weekly newspaper, 2 physicians, 3 carpenter shops, meat market, blacksmith shop, 1 grain elevator, a grist mill and a cheese and butter factory. The village is in need of a cheese box factory, lime kiln, gents' furnishing and shoe store, jeweler, bakery and restaurant, farm implement and machinery dealer.

The village can be supplied with clay, sand, stone, peat and timber. Plenty of help can be secured here to work all of the time. Steam power is used.

This section is a first class farming country and about 15 per cent of the land suitable for crop raising is improved. The soil is fertile and the land is level and free from stone.

HORTONVILLE.

Hortonville, Outagamie Co. Population, 890. An incorporated village located on the C. & N. W. Ry., in the southwestern part of the county, 12 miles north-west of Appleton, 26 miles from Oshkosh, 60 miles from Manitowoc, 107 miles from Milwaukee and 192 miles from Chicago. American Express. Telegraph and telephone. Good shipping facilities and passenger service.

Is a thriving village with wide streets, shade trees, cement walks, a fire department, a bank, 1 drug store, 3 groceries, 2 hardware and 2 general stores, a shoe store, good high school employing 8 teachers, Catholic and Lutheran parochial schools, 1 hotel, 3 boarding houses, 3 physicians, 1 lawyer, farm machinery dealer, harness shop, 3 wagon and blacksmith shops, planing and saw mill, flour mill, a brewery and a creamery. A weekly newspaper is published. Wood and coal are used for fuel. There is some wood in the vicinity and coal is obtained from Oshkosh or Green Bay. Plenty of help can be secured. There are openings in this village for canning and condensed milk factory, pickle salting station, brick yard, cement block factory and woodenware factory.

The village is located in a fine farming country and about all of the land suitable for crop raising is improved. The land is all level and free from stone. The low lands or bottoms are used for pastures.

KAUKAUNA.

Kaukauna, Outagamie Co. Population, 4,991. 7 miles from Appleton, 22 miles from Green Bay, 60 miles from Sheboygan and 112 miles from Milwaukee. C. & N. W. Ry. Electric railway to Oshkosh and to Green Bay. Telephone system. Electric light plant. Western Union and Postal Telegraph. American Express.

Kaukauna is located on the Fox river which is one of the most completely developed water power streams in the state of Wisconsin. There is a very abrupt fall in the river at this place developing some very extensive water power not all of which is utilized. Manufacturers can lease power in this city at very reasonable rates. Owing to the extensive water power, paper and pulp manufacturing are the leading industries. Any kind of manufacturing can be economically conducted at this place. Such raw materials as sand, clay and timber can be obtained in abundance. Vegetables and sugar beets could also be furnished in large quantities. The division shops of the C. & N. W. Ry., which employ a large number of men are located in this city. There are 9 physicians and 4 lawyers located here. 25 teachers are employed in the public schools. Two weekly papers are published.

Kaukauna has gained a considerable reputation as a summer resort. There are two hotels and a number of boarding houses which furnish adequate accommodations.

LITTLE CHUTE.

Little Chute, Outagamie Co. Population, 1,220. An incorporated village located on the Fox river and the C. & N. W. Ry., in the southeastern part of the county, 5 miles northeast of Appleton, the judicial seat, 23 miles from Green Bay, 131 miles from Madison, 107 miles from Milwaukee and 192 miles from Chicago. American Express. Telephone and telegraph. Extra good shipping facilities and passenger service. Electric railway connections.

The village is lighted by electricity, has 1 bank, 3 grocery stores, 1 hardware store, 1 dry goods store, 2 laundries, 2 hotels, 3 boarding houses, high school employing 9 teachers, churches, 1 physician, grain elevator, lumber yard, flour mill, 2 paper mills and a pulp mill.

There is a water power here not all utilized. Coal for fuel is shipped from Green Bay. Fruit and vegetables can be supplied for canning purposes and clay, sand and stone are the

natural products. Plenty of help can be secured here to work the entire year. This is a good location for any kind of manufacturing industries.

All the suitable farming lands in the surrounding country are improved.

SEYMOUR.

Seymour, Outagamie Co. Population, 1,118. An incorporated city located on the Green Bay & Western Ry., in the northeastern part of the county, 17 miles east of Green Bay, 20 miles north of Appleton, 146 miles from Milwaukee and 231 miles from Chicago. United States Express. Telephone and telegraph. Good shipping facilities and passenger service.

The city is supplied with water from wells, is lighted by electricity, has 2 banks, 2 drug stores, 3 grocery stores, 3 hardware and 5 general stores, 2 hotels, 2 boarding houses, high school employing 10 teachers, churches of the leading religious denominations, 2 furniture stores, 1 shoe store, 4 physicians, 1 lawyer, 2 bakeries, 2 harness shops, 2 meat markets, 3 flour and feed stores, a flour mill, 3 millinery stores, 2 photographers, a canning factory, saw mill, woodenware factory and a creamery. A weekly newspaper is published.

Steam power is used here. Wood and coal are the fuels used. Wood is obtained from the locality and coal from Green Bay. The city can be supplied with clay, sand and lime stone. Help can be secured in the city. This is a good location for a starch factory.

The surrounding country is a rich agricultural section, and seven-eighths of the land suitable for crop raising is improved. A large per cent of the land is level and free from stone with a little swamp and sand.

SHIOCTON.

Shiocton, Outagamie Co. Population, 491. An incorporated village located on the Green Bay & Western Ry., and on the east branch of Wolf river, 26 miles from Appleton, the county seat, 31 miles from Green Bay, 114 miles from Milwaukee, and 199 miles from Chicago. United States Express. Telephone and telegraph. Good shipping facilities and passenger service.

The village has macadamized streets, shade trees, 1 bank, a drug store, 3 groceries, 1 hardware, 2 general and 3 dry goods stores, one clothing store, 1 furniture store, 2 hotels, graded public school employing 3 teachers, a business college, Catholic, Congregational and Lutheran churches, 2 physicians, 1 dentist, 1 meat market, jewelry shop, 1 bargain store, harness shop, bakery, blacksmith shop, grist mill and woodworking shop. A weekly newspaper is published.

Wood is used for fuel obtained from the adjacent country. Fruit, vegetables, corn and beans can be furnished in sufficient quantities for canning. Clay, peat and timber are the natural products. There are large quantities of maple, ash and elm timber on the Wolf river flats. Any amount of help can be secured here.

The following industries are needed in the village: Cheese box, vegetable and berry box and bent wood factories, machine shop and foundry, brick yard, electric light plant, potato warehouse, canning and pickling factories and cooper shop.

About 10 per cent of the land suitable for crop raising is improved. The land is mostly level and free from stone and but little sandy soil.

OZAUKEE COUNTY.

Ozaukee county is located in the southeastern part of the state and borders on Lake Michigan. It is a small county with an area of but 226 square miles. The population in 1905 was 17,476, a gain of 1,113 over the census of 1900. About one-fifth of the population is foreign born, of which number a large majority are Germans. In 1890 the total area devoted to agricultural purposes was 141,233 acres, of which amount 102,275 acres were improved. This acreage represented practically all the available land in the county. The value of the farms including improvements has increased from \$8,603,850 in 1890 to \$11,133,205 in 1905. The surface of the county is rolling and somewhat hilly, especially in the western part. The surface has been modified by glacial erosion and deposition and also by river erosion. The soil in the eastern part of the country extending several miles from the lake shore is a heavy red clayey loam derived from the red locustrine clays. Covering the western part of the county the soil is a heavy clayey loam and very fertile. A small strip of land in the northeastern part and bordering on Lake Michigan is covered with a sandy loam. The western part contains numerous hills composed mainly of boulders, clay and limestone gravel. The surface of this portion is also strewn with boulders. The principal farm crops and the acreage devoted to each in 1890 and in 1905 were as follows:

	Acreage in 1890.	Acreage in 1905.
Oats	14,384	16,901
Barley	3,094	1,771
Rye	3,094	1,771
Corn	3,226	4,471
Clover seed	3,994	2,369
Hay	24,544	22,628

This county has a well developed dairy industry, there being 24 cheese factories and 6 creameries to take the milk supply. An increasing acreage is being annually devoted to the raising of sugar beets. The only unimproved land in the county consists of a small tract owned in connection with improved land. Such lands average in price about \$40 per acre. Improved land ranged in price from \$75 to over \$100 per acre. Port Washington is the county seat. The population of the cities, towns and villages of the county in 1905 was as follows:

OZAUKEE COUNTY.

TOWNS, CITIES AND VILLAGES.	Families.	AGGREGATE POPU- LATION.			COLOR.			Ex-soldiers and sailors.	Militia.
		Male.	Female.	Total.	White.	Colored.	Indians.		
Belgium	282	834	763	1,597	1,597	.....	.....	6	337
Cedarburg	316	742	695	1,437	1,437	.....	.....	2	235
Cedarburg City	341	822	858	1,630	1,689	.....	.....	16	246
Fredonia	315	854	779	1,633	1,633	.....	.....	12	350
Grafton	186	583	471	1,054	1,054	.....	.....	4	195
Grafton, village	124	256	264	520	520	.....	.....	7	92
Mequon	552	1,462	1,270	2,732	2,732	.....	.....	10	493
Port Washington	209	647	545	1,192	1,192	.....	.....	4	181
*Port Washington, city.	776	2,292	1,744	4,036	4,036	.....	.....	14	1,225
Saukville	307	824	771	1,595	1,595	.....	.....	8	275
Total	3,398	9,316	8,160	17,476	17,476	.....	.....	83	3,629

*Wards not given.

SAUKVILLE.

Saukville, Ozaukee Co., is an unincorporated village of about 350 inhabitants located on the C., M. & St. P. Ry., 28 miles from Milwaukee and 113 miles from Chicago. Telephone and telegraph. Good facilities for receipts and shipment of freight. Four passenger trains daily. United States Express.

A two hundred horse water power can be developed here. About 150 laborers can be procured for factory work. Such raw materials as fruit, vegetables, clay, timber, peat and stone can

be supplied. The village is supplied with 3 general stores, a laundry, meat market, feed mill, livery stable, 2 blacksmith shops, a grain elevator, a creamery, coal and lumber yard, 4 hotels, a physician, a public school employing 5 teachers, and a public park.

About three-fourths of the land in the vicinity of this village suitable for farming is improved. About one-eighth swampy, one-eighth sandy, the remainder excellent farming land.

THIENSVILLE.

Thiensville, Ozaukee Co., is an unincorporated village of about 350 people, located on the C., M. & St. P. Ry., 18 miles from Milwaukee and 103 miles from Chicago. Facilities for receipt and shipment of freight good. Five daily passenger trains. Telephone and telegraph. United States Express.

In this village there is about 100 horse undeveloped water power. Coal is shipped from Milwaukee. Such raw materials as clay, sand, stone, gravel and vegetables can be supplied, and 175 laborers procured. An electric railroad is soon to be built connecting this village with Chicago, Milwaukee and other cities. This village is supplied with 2 groceries, a hardware store, lumber and coal yards, printing office, brick and tile factory, flour mill, harness shop, 3 hotels, 1 physician and a graded school of 3 departments. The streets are well kept and the village has an abundance of shade trees.

About 90 per cent of the land surrounding this village suitable for farming is improved. About 25 per cent of the land is somewhat stony, 5 per cent marshy, 25 per cent sandy and 45 per cent level and free from sand, stone, or swamps.

GRAFTON.

Grafton, Ozaukee Co. is an incorporated village having 520 inhabitants, located on the C. M. & St. P. Ry., 24 miles from Milwaukee and 106 miles from Chicago. Four passenger trains daily. Good facilities for receipt and shipment of freight. Telephone and telegraph. United States Express.

Coal is shipped from Milwaukee. Such raw materials as fruit, vegetables, clay, sand, and limestone can be supplied and 100 laborers procured. A canning factory, cucumber salting station or tannery is best suited for the place. An electric light plant is also needed. The village has 3 groceries, 2 general stores, a hardware, brewery, lime kiln, an establishment manufacturing steam fitting supplies, 2 woolen factories, flour mill, saw mill, creamery, lumber yard, 3 hotels, 3 boarding houses, and two physicians.

All the surrounding farm lands near the village are improved. The soil is a clayey loam and excellent for general farming.

PORT WASHINGTON.

Port Washington, Ozaukee Co., is a city of 4,036 inhabitants, located on the C. & N. W. Ry., 111 miles from Chicago and 26 miles from Milwaukee. It has 10 passenger trains daily. Good facilities for receipt and shipment of freight. Telephone and telegraph. American Express.

Coal shipped by lake is the principal fuel used. Such raw materials as fruit vegetables, and clay for tile and brick can be supplied, and help procured. The village is supplied with an electric light plant, a bank, 2 drug stores, 5 groceries, 3 hardwares, 1 department store, 4 dry goods stores, 1 laundry, 2 clothing stores, 2 harness shops, 5 shoe stores, 5 cigar factories, 3 jewelry stores, 3 meat markets, 3 hotels, 5 boarding houses. 5 physicians, 5 lawyers and a high school employing 20 teachers.

CEDARBURG.

Cedarburg, Ozaukee Co., is a city having a population of 1,630; is located on the C. M. & St. P. Ry., 22 miles from Milwaukee and 107 miles from Chicago. Telegraph and telephone. Excellent facilities for receipt and shipment of freight. Five passenger trains daily. United States Express.

Such raw material as clay, sand, stone, fruit and vegetables can be supplied. Coal is shipped from Milwaukee. A foundry is best suited for the place. The city is soon to have electric railroad communications with Milwaukee, Chicago and other cities. A willow-ware factory was established here at one time but failed on account of poor management. This place is already supplied with an electric light plant, a bank, drug store, 5 groceries, 2 hardwares, 4 dry goods stores, a laundry, a wire nail factory, woolen mills, a shoe factory, a sash and door factory. 1 attorney at law, and a weekly newspaper, high school employing 13 teachers. The streets are paved, well provided with shade trees, and the city is a summer resort town.

The surrounding country comprises some of the best farming lands of the state and is well adapted for general farming and market gardening.

PEPIN COUNTY.

Pepin county is located in the west-central part of the state on the Mississippi river. It is one of the smallest counties in the state with an area of 238 square miles. The population in 1905 was 7,569, of which number 1,387 were of foreign birth. The principal nationalities represented were Swedes, Austrians and Germans. The total farm area in 1905 was 120,844 acres, of which only 62,395 were improved. In 1890 the total farm area was 113,578 acres with 58,082 acres improved. The valuation of the farms including improvements in 1905 was \$4,305,760 as compared with \$1,486,750 in 1890, showing a gain for the period of \$2,819,010. The western part of the county adjacent to the Mississippi and Chippewa rivers consists of high rolling ridge land intersected in all directions with deep ravines and valleys often bordered with precipitous cliffs, the elevations of the ridges above the valleys being over 300 feet. The soils in the western part are mainly light clayey loams, with the exception of a strip several miles wide along the Mississippi river. The forest trees of this region are mainly hardwood in which elm, maple, oak and basswood predominate. The eastern part of the county is not as rough as the western but is still of a rugged character. The soil of this region is a light and easily worked sandy loam, being a continuation of the sandy loams of Eau Claire, Trempealeau and Dunn counties. There are a few irregular areas of prairie soils in the central part of the county. The chief crops of the county and the acreage devoted to each in 1890 and 1905 were as follows:

	Acreage in 1890.	Acreage in 1905.
Wheat	7,402	1,810
Oats	7,175	13,489
Barley	1,529	8,924
Rye	2,066	2,198
Corn	9,803	9,746
Hay	11,376	10,083

As yet, the dairy industry remains largely undeveloped. There are no cheese factories in the county, and only 3 cream-

eries and 2 skimming stations, but interest in this field is increasing. For unimproved land which can be made tillable, the price ranges from \$10 to \$20 per acre, and there is but little to be had. For improved farms the price ranges from \$40 to \$75 per acre. Durand is the county seat. The following table shows the population statistics of the cities, villages and towns of the county for 1905:

PEPIN COUNTY.

TOWNS, CITIES AND VILLAGES.	Families.	AGGREGATE POPULATION.			COLOR.			Ex soldiers and sailors.	Militia.
		Male.	Female.	Total.	White.	Colored.	Indians		
Albany	117	325	287	612	612	.....	.....	2	109
Durand	59	134	113	247	247	.....	.....	2	46
Durand, city:									
ward 1.....	137	280	283	563	563	.....	.....	.....	.....
ward 2.....	192	371	425	796	796	.....	.....	.....	.....
Total, city, 1,359								23	233
Frankfort	189	474	414	888	888	.....	.....	12	153
Lima	135	402	361	763	763	.....	.....	.....	136
Pepin	226	537	514	1,071	1,071	.....	.....	2	180
Pepin, village	94	198	200	398	398	.....	.....	8	64
Stockholm	90	215	181	396	396	.....	.....	2	74
Stockholm, village	61	117	127	244	244	.....	.....	1	33
Waterville	294	741	755	1,446	1,446	.....	.....	16	244
Waubeck	28	78	67	145	145	.....	.....	2	29
Total	1,622	3,892	3,677	7,569	7,569	.....	.....	70	1,311

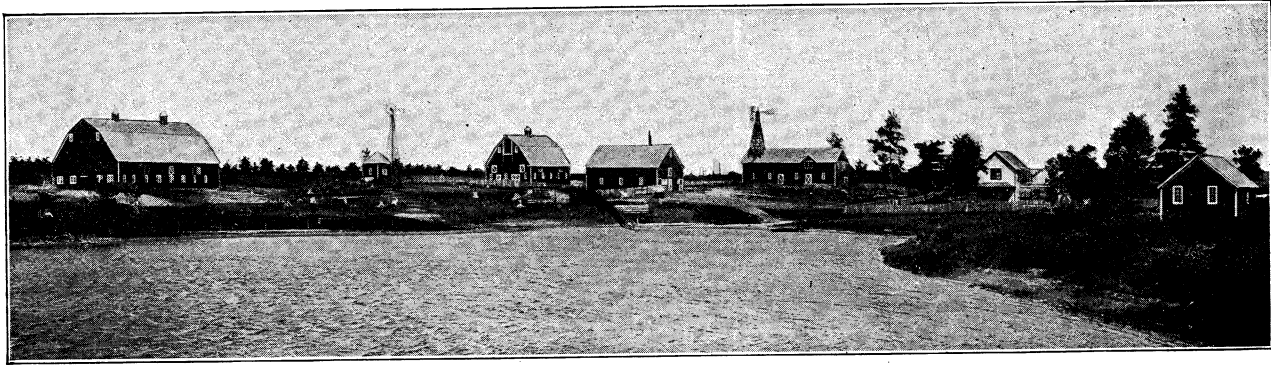
ARKANSAW.

Arkansaw, Pepin Co. Population, 250. An unincorporated village located on the Eau Galle and Eau Claire rivers 4 miles from Durand, the county seat, banking and shipping point; 48 miles from Chippewa Falls, and 87 miles from La Crosse. Has telephone connections.

Has electric plant, 1 drug store, 1 hardware and 2 general stores, 1 hotel, 2 boarding houses, good school employing 2 teachers, a church, 1 physician, 1 lawyer, meat market, blacksmith shop, and a planing mill. A first class hotel is needed.

Wood is used for fuel, obtained from the nearby forests. Vegetables could be supplied for canning and cucumbers for a salting station. Sandstone and timber are the natural products, Plenty of help can be secured.

The surrounding country is good for farming and only about 50 per cent of the land suitable for crop raising is improved. About 35 per cent of the country is rough, and 15 per cent sandy.



A NORTHERN WISCONSIN FARM.

DURAND.

Durand, Pepin Co. Population, 1,359. An incorporated city located on the C., M. & St. F. Ry., and one the Eau Claire river, in the north central part of the county of which it is the county seat; 44 miles from Eau Claire, 79 miles from La Crosse, 135 miles from Minneapolis, and 277 miles from Milwaukee. United States Express. Telephone and telegraph. Good shipping facilities and passenger service.

The city is located on the east bank of the Chippewa river, has wide level and well kept streets, shade trees, brick and stone business blocks, is lighted by electricity, has 2 banks, 2 drug stores, 5 groceries, 3 hardware, 4 general merchandise, and 3 drygoods stores, 2 furniture stores, 4 feed stores, 2 jewelry shops, 6 hotels, 5 boarding houses, high school employing 11 teachers, parochial schools, 4 churches, a free public library, 2 restaurants, 3 harness shops, a brewery, cigar factory, brick yard and 3 weekly newspapers. A \$35,000 steel bridge spans the Chippewa river at this point.

There is water power here not utilized estimated at 1,000 horse power. Also an electric power for manufacturing purposes. Wood is used for fuel, obtained from the surrounding country. Fruit and vegetables can be supplied for canning. There are large quantities of clay, sand, stone, peat and timber in the vicinity. Plenty of help can be secured to work the entire year. This is a good location for a woodenware or furniture factory, or packing house.

The city is located in a good farming country and only about 60 per cent of the land suitable for crop raising is improved. About 50 per cent of the land is swampy, 15 per cent sandy, but the most of it is level and free from stone. Stock raising and dairying is the chief industry. The country is well supplied with creameries and the shipment of butter and eggs amounts to \$250,000 annually. Unusually large shipments of live stock are made from this point.

STOCKHOLM.

Stockholm, Pepin Co. Population 244. An incorporated village located on the C., B. & Q. Ry., in the southwestern part of the county; 27 miles from Durand, the county seat; 69 miles from Minneapolis, 75 miles from La Crosse and 71 miles from Chippewa Falls. Adams Express. Telephone and telegraph. Good shipping facilities and passenger service.

Has 2 general stores, 1 hotel, graded school employing 3 teachers, 1 physician, 2 blacksmith shops, wagon shop, feed mill and harness shop.

There is plenty of timber on the adjacent land for fuel. Fruit, vegetables and fish can be supplied for canning. The village can

be supplied with sand and stone. A limited amount of help can be secured in the vicinity.

A large per cent of the surrounding country is good for farming and about 2-3 of the land suitable for crop raising is improved.

PIERCE COUNTY.

Pierce county is located in the west central part of the state on the Mississippi river. It has an area of 543 square miles, supporting a population of 23,433 in 1905. About 20 per cent of the population is of foreign birth, Norwegians and Swedes largely predominating. There are also many German settlers. The total area of the farms in 1905, which included practically all the tillable land in the county, was 329,065 acres, of which 189,498 acres were improved. In 1890 the total farm area was 278,811 acres with 158,756 acres improved. A large increase has taken place in the valuation of farm lands. In 1890 the total value was \$5,780,860, while in 1905 this had increased to \$11,857,836, showing a gain of \$6,076,976, or 105 per cent in 15 years. The surface of the county is rolling and hilly. It is especially rough along the Mississippi river where the surface is intersected by numerous deep ravines and valleys often bordered with high precipitous cliffs. The soil covering the larger part of the county through the southern and western portions is a clayey loam of the lighter varieties. This soil yields excellent results with grasses, grain and corn, but is a little too coarse to prove the best wheat land. It is a good potato soil, especially where this type shades into the sandy loams. Along the Mississippi river the soil is generally sandy. Extending down from St. Croix county on the north and into the central part of the county, is a broad belt of loamy clay. This is a heavy soil, and quite uniform in texture and composition. The deep weathering of this soil, together with an abundance of decayed organic material, make it of especial value to agriculture and place it upon an equal rank with the richest farm lands in the Mississippi valley. Every acre of land can be cultivated. All farm crops succeed well, but this soil offers the greatest opportunity in the dairy and stock growing industries. The drainage of the county is uniformly good, and swamps and lakes

are nowhere to be found. The leading crops and their acreage in 1890 and 1905 were as follows:

	Acreage in 1890.	Acreage in 1905.
Wheat	16,317	4,847
Oats	26,732	49,138
Barley	8,880	35,023
Rye	7,241	4,789
Corn	16,411	15,873
Hay	34,501	34,763

In 1905 there were 4 cheese factories, 8 creameries and 6 skimming stations in the county. Sheep raising is also one of the leading industries. Most of the unimproved land which can be made tillable consists of tracts owned in connection with improved lands. The average price for such unimproved lands is about \$20 per acre. Improved farms range in price from \$45 to \$75 per acre. Ellsworth is the county seat. The population of the cities, villages and towns of the county for 1905 will be found on the following page.

BAY CITY.

Bay City, Pierce Co. Population, 150. An unincorporated village located on the C., B. & Q. Ry., and on the Mississippi river in the southern part of the county, about 13 miles south of Ellsworth, the county seat, 8 from Maiden Rock, the nearest banking point, 55 from Minneapolis, and 89 from La Crosse. Adams Express. Telephone and telegraph. Good shipping facilities and passenger service.

The village is located at the head of Lake Pepin, and could be made a fine summer resort. Has 1 hardware and 2 general stores, 1 hotel, 1 boarding house, graded school employing 2 teachers, 1 physician, 1 blacksmith and repair shop, gasoline boat factory, saw mill, shingle mill, and 2 grain elevators.

Wood is used for fuel, obtained from the adjacent country. Fruit, vegetables, fish and corn can be supplied for canning. Clay, sand, timber and building stone are the natural products. Help can be secured here. A good location for a canning factory, lime kiln and brick yard.

The village is located in a good farming section and about 75 per cent of the land suitable for crop raising is improved.

PIERCE COUNTY.

TOWNS, CITIES AND VILLAGES.	Families.	AGGREGATE POPULATION.			COLOR.			Ex-soldiers and sailors.	Militia.
		Male.	Female.	Total.	White.	Colored.	Indians.		
Clifton	128	255	307	662	662	.....	.....	5	145
Diamond Bulff	114	257	241	498	498	.....	.....	8	102
Ellsworth	257	693	655	1,348	1,348	.....	.....	3	228
Ellsworth, village	247	522	538	1,060	1,060	.....	.....	23	225
El Paso	206	619	459	1,108	1,108	.....	.....	3	214
Gilman	238	672	561	1,233	1,233	.....	.....	7	210
Hartland	251	621	523	1,144	1,144	.....	.....	4	215
Isabelle	98	232	202	434	434	.....	.....	3	89
Martell	239	651	560	1,211	1,211	.....	.....	11	198
Maiden Rock	245	618	491	1,109	1,108	1	.....	2	206
Maiden Rock, village..	80	153	170	323	323	.....	.....	9	52
Oak Grove	145	396	351	747	747	.....	.....	5	151
Prescott, city:									
ward 1.....	83	158	168	326	323	3	.....	.....	.....
ward 2.....	81	139	145	284	284	.....	.....	.....	.....
ward 3.....	80	133	146	279	278	1	.....	.....	.....
Total, city, 889								20	134
River Falls	253	624	560	1,184	1,184	.....	.....	14	174
River Falls, city:									
ward 2.....	233	438	569	1,077	1,004	3	.....	16	176
ward 3.....	118	218	274	492	470	2	.....	7	76
ward 4.....	153	265	339	654	654	.....	.....	20	82
Total, city, *2,100									
Rock Elm	251	616	532	1,148	1,148	.....	.....	13	226
Salem	192	485	476	961	961	.....	.....	8	165
Spring Lake	293	733	651	1,384	1,384	.....	.....	14	291
Spring Valley, village.	335	592	511	1,103	1,103	.....	.....	11	230
Trenton	202	492	426	918	918	.....	.....	11	134
Trimhelle	324	751	661	1,412	1,411	1	.....	32	244
Union	296	717	687	1,404	1,404	.....	.....	13	245
Total	5,152	12,150	11,283	23,433	23,422	11	.....	270	4,218

*Total for Pierce and St. Croix counties.

ELLSWORTH.

Ellsworth, Pierce Co. Population 1,060. 44 miles from St. Paul, 247 miles from Madison and 356 miles from Milwaukee. C., St. P., M. & O. Ry. Good freight and passenger service. Electric lighting plant. Waterworks. Telephone system. Western Union Telegraph. American Express.

Ellsworth is the county seat of Pierce county. There are located here at the present time 3 flour mills, an elevator, a brewery and a creamery. Agricultural products, sand, stone and timber can be furnished in large quantities. There are 2 newspapers, 1 bank and churches of the leading denominations. The hotel accommodations are adequate.

ELMWOOD.

Elmwood, Pierce Co. Population 250. A village located on a branch of the C., St. P., M. & O. Ry., and on the Eau Galle river, in the northeastern part of the county, 22 miles from Ellsworth, the county seat, 15 miles southwest of Menomonie, 62 miles from Eau Claire, 70 miles from Minneapolis. American Express. Telephone and telegraph. Fairly good shipping facilities and passenger service.

Has a bank, 1 drug store, 1 grocery, 1 hardware and 6 general stores, 2 hotels, graded school employing 3 teachers, a Methodist church, a physician, 2 blacksmith shops, meat market, barber shop, bolt factory, 2 saw mills, feed mill, lumber yard and creamery. Better hotel facilities are needed. Such raw material as fruit and vegetables can be supplied for canning, and clay, sand, stone and iron are the natural products. This is a good location for a brick yard.

The village is located in a good farming country, about 80 per cent of the land being level and free from stone. 75 per cent of the land suitable for crop raising is improved.

MAIDEN ROCK.

Maiden Rock, Pierce Co. Population, 323. An incorporated village located on the C., B. & Q. Ry., and on the Mississippi river, in the southeastern part of the county, 18 miles southeast of Ellsworth, 63 miles from Minneapolis, 81 miles from La Crosse, and 279 miles from Milwaukee. Adams Express. Telephone and telegraph. Good freight facilities and passenger service.

The village is nicely located, beautiful natural scenery, good streets, is supplied with a bank, 1 drug store, 2 hardware and 4 general stores, 2 hotels, graded public school employing 3 teachers, Methodist church, 1 physician, 2 lawyers, 1 furniture store, 1 millinery store, meat market 3 blacksmith shops, 2 livery barns, 2 grain elevators, and a weekly newspaper. The village is the receiving and shipping point for several small inland towns.

Wood and coal are used for fuel. Wood is obtained from the adjacent country and coal from Illinois. Fish and a limited amount of fruit and vegetables are the raw materials for canning, and timber and large quantities of stone are the natural products. A limited amount of help can be secured here.

The surrounding country is rolling and about all of the land suitable for crop raising is improved. Good soil and no swamps or sand.

PRESCOTT.

Prescott, Pierce Co. Population, 889. An incorporated city located on the C., B. & Q. Ry., and at the confluence of the Mississippi and St. Croix rivers, 12 miles west of Ellsworth the county seat, 38 miles from Minneapolis, and 110 miles from La Crosse. United States Express. Telephone and telegraph. Good shipping facilities and passenger service.

The village has cement walks, fine shade trees, public park, is lighted by electricity, has a bank, 2 drug stores, 2 groceries, 2 hardware and 3 general stores, 2 hotels, 2 boarding houses, graded public schools employing 6 teachers, Catholic, Congregational, Episcopal and Methodist churches, 2 physicians, 1 lawyer, and a weekly newspaper.

There is a good water power 5 miles from the city. Coal is used for fuel obtained from Illinois. Vegetables and fish can be supplied for canning. The natural products are sand, timber and stone. Plenty of help in the city. Good location for flour mill, boat building and repairing and gasoline engine factory.

There are some good farm lands in the adjacent country, but the land along the river is rough. Back from the river the land is rolling with a sandy loam soil.

RIVER FALLS.

River Falls, Peirce Co. Population 2,300. An incorporated city located on the Ellsworth branch of the C., St. P., M. & O. Ry., in the northern part of the county (one ward of the city lying in St. Croix county), 13 miles from Ellsworth, the county seat, 31 miles from St. Paul, 163 miles from Superior, 19 miles from Eau Claire, 262 miles from Madison, and 364 miles from Milwaukee. American Express. Telephone and telegraph. Fairly good shipping facilities and passenger service.

The city has many fine shade and oriental trees, a 20 acre public park, gas and electric light plants, 2 banks, 2 drug stores, 6 groceries, 4 hardware and 5 dry goods stores, 1 laundry, 3 large hotels, high and graded public schools, a state normal school, 7 churches representing the leading religious denominations, 5 physicians, 4 lawyers, starch factory, wagon and sleigh factory, tank heater factory, cigar factory, 3 flour and grist mills and a pickle salting station. 2 weekly newspapers are published. Good location for a canning factory or woolen mill.

There is a water power here of which 500 H. P. is not utilized. Wood and coal are used for fuel. Wood is obtained in the vicinity. Clay, sand, stone, timber and iron are the natural products. Plenty of help can be secured here. There is a

fine summer resort on St. Croix lake about 8 miles from the city.

The city is located in a good farming country and about 90 per cent. of the land is improved. About 40 per cent of the country is rough, 50 per cent sandy, and 60 per cent level and free from stone.

ROCK ELM.

Rock Elm, Pierce Co. Population, 200. An unincorporated village in Rock Elm township, 15 miles east of Ellsworth, the county seat, 6 miles from Elnwood the nearest banking and shipping point.

Has a telephone system, 1 drug store, 1 hardware and 2 general stores, 1 milliner store, 1 hotel, 1 boarding house, graded school employing 2 teachers, 1 physician, 1 lawyer, 2 blacksmith shops, wagon shop, flour mill, saw and planing mill and harness shop. Stages daily to Maiden Rock and Spring Valley.

A canning factory is needed here. Wood is used for fuel obtained from the adjacent country. Fruit and vegetables can be supplied for canning. Clay, sand, stone and timber are the natural products. Help can be secured in the village.

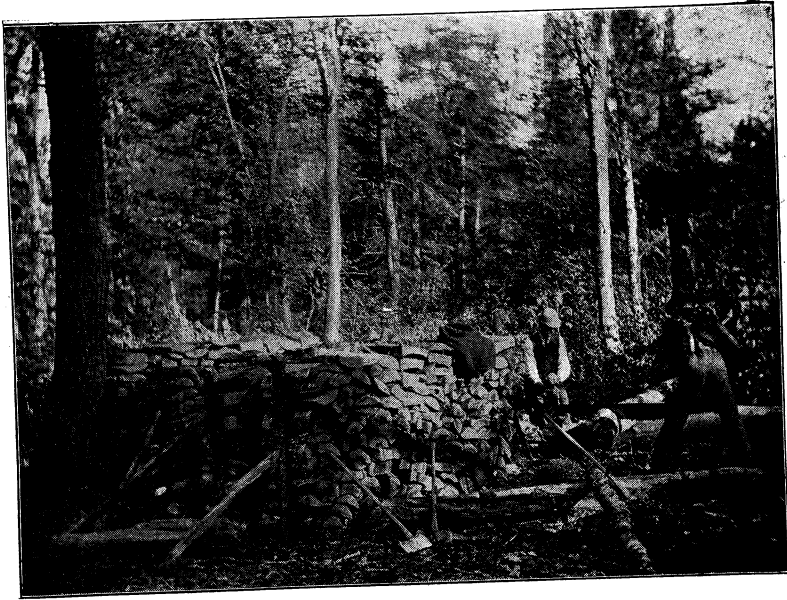
The surrounding country has a good clay soil and is mostly level and free from stone. About 75% of the land suitable for crop raising is improved.

SPRING VALLEY.

Spring Valley, Pierce Co. Population 1,103. An incorporated village located on a branch of the C., St. P., M. & O. Ry., in the northeastern part of the county, 21 miles northeast of Ellsworth, the county seat, 63 miles from Minneapolis, 70 miles from Chippewa Falls, 239 miles from Madison and 321 miles from Milwaukee. American Express. Telephone and telegraph. Shipping facilities and passenger service fair.

The village is nicely located in the valley of the Eau Galle river, has good streets, a few shade trees, good water, is lighted by electricity, has a bank, 2 drug stores, 4 groceries, 2 hardware and 5 general stores, furniture store, clothing store, 3 hotels, high school employing 7 teachers, Catholic, Congregational and Lutheran churches, 2 physicians, 1 dentist, 1 lawyer, 2 millinery establishments, 2 meat markets, harness shop, bakery, tailor shop, 1 photographer, 3 blacksmith shops, 2 barber shops, 2 grain elevators handling flour and feed, 2

lumber yards, 2 livery barns, a foundry, an iron smelter, a spoke, stave and heading plant and a creamery. A weekly newspaper is published.



MAKING THE TIMBER PAY FOR THE LAND AND IMPROVEMENTS IN
NORTHERN WISCONSIN.

There is an undeveloped water power here. Wood is the principal fuel used obtained from the surrounding country. All kinds of vegetables can be supplied for canning. This is considered a good location for a canning factory. The natural products are clay, sand, stone, timber and iron ore. The iron ore is smelted at the local smelter and produces a very good quality of iron for the manufacture of stoves or car wheels. Help can be secured in the vicinity.

This is a good farming section. Soil is a black loam with a clayey sub-soil, no swamps or sand and only a small portion of the land is stony.

POLK COUNTY.

Polk county is located in the northwestern part of the state on the St. Croix river. The area is 933 square miles. The population in 1905 was 20,885, a gain of 3,084 over the returns for 1900. Out of the total population 5,850 are of foreign birth, made up almost entirely of Swedes, Norwegians and Danes. While a large amount of land has been occupied for agricultural purposes the acreage under actual cultivation is relatively small. The total farm acreage in 1905 was 343,498 acres of which only 124,684 acres were improved. In 1890 the farm acreage was 230,379 acres of which only 80,881 acres were improved. The value of the farms and improvements increased during the period from 1890 to 1905, from \$2,827,012 to \$8,204,423, a gain of nearly 200% in 15 years. The surface of the county has been modified by glacial erosion and deposition. It is generally rolling land with occasional stretches of level surface. The county is traversed by a range of hills which run in the northeast-southwest direction. The soils in this county are mainly light clayey loams. In the western part and in the center of the county are acres of heavy clayey loams, while in the northwest and south-central portions occur areas of sand and sandy loams. There is no humus soil, but small lakes of irregular shapes abound. The leading crops and their acreage in 1890 and 1905 were as follows:

	Acreage in 1890.	Acreage in 1905.
Wheat	7,720	3,120
Oats	15,406	36,626
Barley	768	4,024
Corn	5,263	6,622
Hay	27,532	47,854
Rye	2,807	1,235

In 1905 there were 5 cheese factories, 22 creameries and 6 skimming stations in the county. The amount of land now occupied for agriculture is less than 60% of the total area of the county, leaving several hundred thousand acres still open to settlement. In general, nearly all of this land is well adapted to general farming and will with ease support a dairy industry as is shown by its growth where the proper interest has been developed. Unim-

proved land can be purchased in large tracts at from \$12 to \$25 per acre. Improved land ranges in price from \$25 to \$75 per acre, according to quality and location. Balsam Lake is the county seat. The following table shows the population of the cities, towns and villages of the county in 1905.

POLK COUNTY.

TOWNS, CITIES AND VILLAGES.	Families.	AGGREGATE POPULATION.			COLOR.			Ex-soldiers and sailors.	Militia.
		Male.	Female.	Total.	White.	Colored.	Indians.		
Alden	301	814	711	1,525	1,525			4	223
Apple River	105	297	235	532	531		1	2	91
Balsam Lake	191	460	414	874	852		22	8	121
Beaver	104	308	245	553	553			1	100
Black Brook	2	555	449	984	984			8	163
Bone Lake	61	126	112	238	238				44
Clam Falls	79	212	162	374	374			5	57
Clayton	176	514	486	1,000	1,000			2	160
Clear Lake	169	439	400	839	839			3	151
Clear Lake, village...	129	268	240	508	508			16	80
Eureka	246	646	547	1,193	1,182	2	9	7	197
Farmington	178	564	452	1,016	1,016			8	186
Garfield	171	481	427	908	908			2	135
Georgetown	81	211	194	4	360		45	3	82
Johnstown	37	97	89	186	186			2	31
Laketown	177	449	380	820	820			1	140
Lincoln	193	544	454	998	998			8	180
Amery, village	169	379	374	753	753			8	140
Loralne	69	169	153	322	322			4	34
Luck	103	297	250	547	547			2	102
Luck, village	77	211	161	372	364		8	2	83
McKinley	53	113	100	213	213			1	42
Milltown	184	455	369	824	812		12	3	127
Osceola	185	483	404	887	887			5	176
Osceola, village	131	286	287	573	573			13	127
St. Croix Falls	127	326	269	595	595			2	105
Centuria, village	65	150	131	281	281			2	62
St. Croix Falls, vil...	126	337	275	612	612			7	163
Sterling	157	423	346	769	769			12	152
West Sweden	94	277	224	501	501			1	85
Frederick, village	155	379	304	683	683			1	197
Total	4,289	11,241	9,644	20,885	20,786	2	97	144	3,736

AMERY.

Amery, Polk Co. Population 753. An incorporated village located on the M., St. P. & S. Ste. M. Ry., in the southeastern part of the county, and on Apple river a water power stream, 12 miles from Balsam Lake, the county seat, 63 miles from Minneapolis, 120 miles from Superior, and 131 from Ashland. Western Express. Telephone and telegraph. Shipping facilities and passenger service good.

The village has a good system of public water works for domestic use and fire protection, is lighted by electricity, has 2 banks, 1 drug store, 2 hardware and 5 general merchandise stores, 2

hotels, good high school employing 7 teachers, Catholic, Congregational, Norwegian and Swedish Lutheran churches, furniture store, restaurants, blacksmith shops, meat markets, harness shops, tailor shops, millinery store, music store, a photographer, opera house, feed mill, fur tannery, brick yard and a creamery. A weekly newspaper is published.

The village can be made a summer resort. There are numerous lakes in the vicinity. Lake Wapagasset, one of the most picturesque bodies of water in the surrounding country, is located $1\frac{1}{2}$ miles from the village, affording excellent boating and fishing and fine natural scenery. A large first class hotel is needed.

Apple river will furnish an abundance of water power. Fruit and vegetable can be supplied for canning. Plenty of help can be secured in the village and adjacent country.

This is a good farming country and only about one-half of the land suitable for crop raising is improved. The country is rolling with but very little waste or poor lands. Soil is fertile and quite free from stone. Dairying and stock raising are the chief occupations.

BALSAM LAKE.

Balsam Lake, Polk Co. Population 300. The county seat of Polk county is located on the Balsam branch of Apple river and on Balsam Lake, in the central part of the county, 20 miles northeast of Osceola, and 5 miles from Centuria the nearest shipping point. Has telephone connections. Stage daily to St. Croix Falls.

The village is a favorite summer resort. Two club houses and several cottages dot the shore of the lake and hundreds of tourists spend the season here. The village was incorporated in 1905. Has county buildings erected at a cost of \$35,000, a bank, 1 hardware store, 2 general stores, 2 hotels, graded public school employing 3 teachers, a physician, a large flouring mill and a saw mill. A weekly newspaper is published.

Fruit and vegetables can be furnished for canning. There are large quantities of clay, sand, stone and timber in the vicinity. There is a large water power located near the head of the outlet of Balsam lake, estimated at 1,000 H. P. A dam is built across the river with a fall of from 12 to 15 feet. Only about 175 H. P. is used at present. Wood is used for fuel, obtained from the surrounding country. Plenty of available help in the village and adjoining country. Good location for mercantile or manufacturing industries.

The village is surrounded by a good farming country and about 75 per cent of the land suitable for crop raising is improved. The soil is a sandy loam with clayey subsoil, 10 per cent stony, a small part swampy or sandy and 50 per cent level and free from stone. Dairying is an important industry.

CENTURIA.

Centuria, Polk Co. Population 281. An incorporated village located on the Frederic branch of the M., St. P. & S. Ste. M. Ry., in the western part of the county, 5 miles from Balsam Lake, 65 miles from Minneapolis, and 148 from Superior. Western Express. Telegraph and telephone. Fairly good shipping facilities and passenger service.

The village is supplied with a bank, 2 hardware stores, 2 general stores, 1 implement and feed store, 1 grocery store and restaurant, 1 boarding house, good graded school, a church, 1 physician, grain warehouse, 2 blacksmith shops, 1 heading mill and a combination saw, planing and feed mill. The following business opportunities exist and would be profitable: Hotel, drug store, furniture factory, trunk factory and starch factory.

There is no water power here but electrical power can be obtained from St. Croix Falls, 6 miles distant. There is a great deal of hardwood timber in the surrounding country.

The village is surrounded by a good farming country and is quite thickly settled. The soil is a sandy loam and large crops of potatoes are produced.

CLEAR LAKE.

Clear Lake, Polk Co. Population 508. An incorporated village located on the C., St. P., M. & O. Ry., in the southeastern part of the county, 30 miles from Balsam Lake, the county seat, 63 miles from Minneapolis, 119 miles from Superior, and 130 from Ashland. American Express. Telegraph and telephone connections. Good shipping facilities and passenger service.

The village has graded streets and good walks, shade trees in the residence portion, village hall, a bank, drug store, 1 hardware, 2 groceries and 3 general stores, a clothing store, furniture store, graded public school employing 5 teachers, 2 churches, 3 physicians, 1 lawyer, 2 hotels and a boarding house, harness shop, 3 blacksmith shops, and a creamery. A weekly newspaper is published. This is a first-class location for a brick and tile factory, canning and condensed milk factories.

Steam power is used here. Wood is used for fuel, obtained from the adjacent land. Deposits of lead and iron ore

have been recently discovered in the adjacent country. Only a limited amount of help can be secured in the village.

The surrounding country is good for farming and only about 35% of the land, suitable for crop raising, is improved. 75 per cent of the land is level and free from stone, 10% rough, 10% stony and 5% swampy. Dairying and stock raising are chief occupations. The creamery in the village receives about 3,000 pounds of milk and 1,500 pounds of cream daily, besides there is a large amount shipped to other points. About 5,000 cords of hardwood, and from 3,000 to 4,000 tons of hay are shipped annually.

FREDERIC.

Frederic, Polk Co. Population 683. An incorporated village located at the terminus of the Frederic branch of the M., St. P. & S. Ste. M. Ry., in the extreme northern part of the county, 18 miles north of Balsam Lake, the judicial seat, 82 miles from Minneapolis, 164 miles from Superior, and 175 miles from Ashland. Western Express. Telegraph and telephone connections. Fairly good shipping facilities and passenger service.

The village has wide streets, 2 public parks under construction, is supplied with a bank, drug store, 1 grocery, 2 hardware, 4 general stores, 1 clothing store, 1 furniture store, 2 millinery stores, 2 hotels, 2 boarding houses, graded public schools employing 4 teachers, 2 physicians, 1 lawyer, good churches, a new village hall, 2 bakery shops, 2 restaurants, barber shop, 1 blacksmith shop, 2 saw mills, planing mill, grist mill and heading mill. Two weekly newspapers are published. Has an electric light plant. Is in need of a first class hotel, furniture or woodenware factory.

Steam power is used here. Wood is used for fuel, obtained from the adjacent country. The village can be supplied with clay, sand and timber. Help can be secured in the village.

Not over 50% of the land surrounding the village, suitable for crop raising, is improved. Not to exceed 4% of the land is swampy or sandy and 50% is level and free from stone.

LUCK.

Luck, Polk Co. Population 372. An incorporated village located on the M., St. P. & S. Ste. M. Ry., in the northern part of the county, 10 miles northwest of Balsam Lake, the county seat, 77 miles from Minneapolis, 159 from Superior and 170 miles from Ashland. Western Express. Telegraph and telephone. Fairly good shipping facilities and passenger service.

The village is supplied with a bank, drug store, 2 hardware and 4 general stores, furniture store, 3 hotels, graded school em-

ploying 3 teachers, 3 physicians, 1 restaurant, meat market, 3 blacksmith shops, 2 saw, planing and feed mills, excelsior factory, and a creamery. A weekly newspaper is published.

A hotel and a woodworking establishment are needed.

Steam power is used here. Wood is used for fuel, obtained from the adjoining country. Vegetables can be furnished for canning and clay, sand, peat and timber are the natural products. Help can be secured here.

The surrounding country is good for agricultural purposes, and about 50% of the land suitable for crop raising is improved. The soil is a clayey loam.

OSCEOLA.

Osceola, Polk Co. Population 573. An incorporated village located on the M., St. P. & S. Ste M. Ry., and on the St. Croix river in the southeastern part of the county, 20 miles from Balsam Lake, the county seat, 49 miles from Minneapolis, 141 miles from Ashland, 152 miles from Superior, and 115 miles from Chippewa Falls. Western Express. Telegraph and telephone connections. Shipping facilities and passenger service good.

The village was first settled in 1844. Is a favorite summer resort, is supplied with a bank, drug store, 1 grocery, 2 hardware and 2 general merchandise stores, furniture store, excellent schools employing 6 teachers, Baptist, Lutheran and Methodist churches, a physician, a lawyer, 1 hotel, an opera house, 2 restaurants, barber shops, meat markets, 2 harness shops, 1 blacksmith shop, 1 flour mill and 2 feed mills. Two weekly newspapers are published. A first-class hotel is needed.

Steam power will have to be used here. Wood is used for fuel, obtained from the adjacent country. Vegetables can be supplied for canning and clay and sand are plentiful. A limited amount of help can be secured in the vicinity.

This is a good farming country and about 50% of the land suitable for crop raising is improved. A very small per cent of the land is rough, about 10% sandy, a large per cent being level and free from stone.

ST. CROIX FALLS.

St. Croix Falls, Polk Co. Population 612. An incorporated village in the western part of the county on the St. Croix river, opposite Taylor's Falls, Minnesota, and at the terminus of the St. Croix Falls branch of the M., St. P. & S. Ste. M. Ry., 12 miles west of Balsam Lake, the county seat, 58 miles from Minneapolis, 140 miles from Superior, 151 miles from Ashland, and 349 miles from Malwaukee. Western Express. Telegraph and telephone. Good shipping facilities and passenger service. Northern Pacific Ry. at Taylor's Falls.

The village is located on the banks of the St. Croix river at the head of navigation, adjoining Inter-State Park, is lighted by

electricity, has a bank, 1 drug store, 2 groceries, 1 hardware, 1 clothing and 2 general stores, furniture store, jewelry store, 2 hotels, a high school employing 6 teachers, county training school for teachers, Methodist and Presbyterian churches, 1 physician, 2 lawyers, 2 restaurants, 2 meat markets, 2 harness shops, 2 lumber yards, 1 flour mill, (50 bbls.) 1 planing mill and a saw mill. Two weekly newspapers are published. A first-class hotel is needed.

There is a large water power here which is being utilized to generate electricity for manufacturing purposes, and when completed will supply cheap power. Wood and coal are used for fuel. Wood is plentiful in the adjoining country and coal is obtained from St. Paul and Minneapolis. Fruit and vegetables can be supplied for canning. There is plenty of clay, sand, timber and stone in the immediate vicinity. Plenty of help can be secured in the village and adjacent country to work the entire year. This is a good location for a shoe factory, sash and door factory, woolen mill, excelsior, paper and veneer mills and a good flour mill.

This village is located in a fine dairying and grazing country, and only 1-3 of the land suitable for crop raising is improved. About 25% of the country is rough and the remainder level or rolling. Good soil, no stone or sand and no swamps.

PORTAGE COUNTY.

Portage county is situated in the central part of the state. The area of this county is 800 square miles with a population in 1905 of 30,861, a gain of 1,378 over 1900. About one-fifth of the population is of foreign birth, Poles being most numerous with Germans second in number. The farm area of 1905 was 373,974 acres as compared with 307,801 acres in 1890, of which amount 184,350 acres represent improved land. The value of the farms in 1905 including improvements was \$8,809,481 as against \$4,281,350 in 1890. The soil over two tiers of townships in the eastern part of the county is a sandy loam, varying considerably in the relative amounts of sand and clay. It is a generally uneven and rolling county with numerous small lakes and swamps, and containing a variable amount of rounded stone and boulders. This soil is good

strong land capable of being made very productive. It is well adapted to potatoes, corn, oats, rye and hay, but potatoes are the chief crop. This is pre-eminently the potato soil of the state. A dense growth of scrub oak is found on this soil with little hardwood or pine. To the westward of this sandy loam there is a strip of sandy loam with considerable gravel, and with a much more even surface than the land to the east. Potatoes and rye are the principal export crops, but dairy products and live stock are also leading sources of farm income. The Wisconsin river sandy soil which in some counties is quite narrow is very broad in Portage county, and with the associated marsh lands and peaty soils covers a large portion of the southwestern part of the county. The surface is a nearly level plain sloping downward to the south along the river. The forest trees of this formation were pine but they have been almost wholly removed. Owing to the large amount of clay in this soil serving to retain the moisture and the nearness of the ground water, this soil is more productive than sandy soil generally is. The prevailing crops are potatoes, rye, hay, corn and oats, the first two being raised for export, and the others being used for feed for stock. In the northwestern part of the county the soil is a clay loam, the surface of which is rolling, the uplands having broad and level tops and sloping gently into the valleys. The forest growth of this region is hardwood and hemlock, much of which still remains. This soil for fertility compares favorably with any soil in the Mississippi valley and is destined to be a great dairy and stock-raising region. In the southern part of the county there is a large swampy tract, now being improved by drainage. While over one-fourth of this county is still unoccupied for farming, it ranks first among the potato raising counties of the state and is surpassed by but few in the state. The principal crops and their acreage in 1890 and 1905 is as follows:

	Acreage in 1890.	Acreage in 1905.
Corn	14,489	13,468
Oats	24,453	32,708
Rye	15,151	16,254
Hay	29,388	40,358
Potatoes	12,904	25,985

There are 3 cheese factories and 25 creameries in the county. Unimproved land ranges in price from \$12.50 to \$25 per acre, improved land, from \$30 to \$50 per acre, the price in each case depending upon location and the amount of standing timber. Stevens Point is the largest city and county seat. The population of the cities, villages and towns in 1905 was as follows:

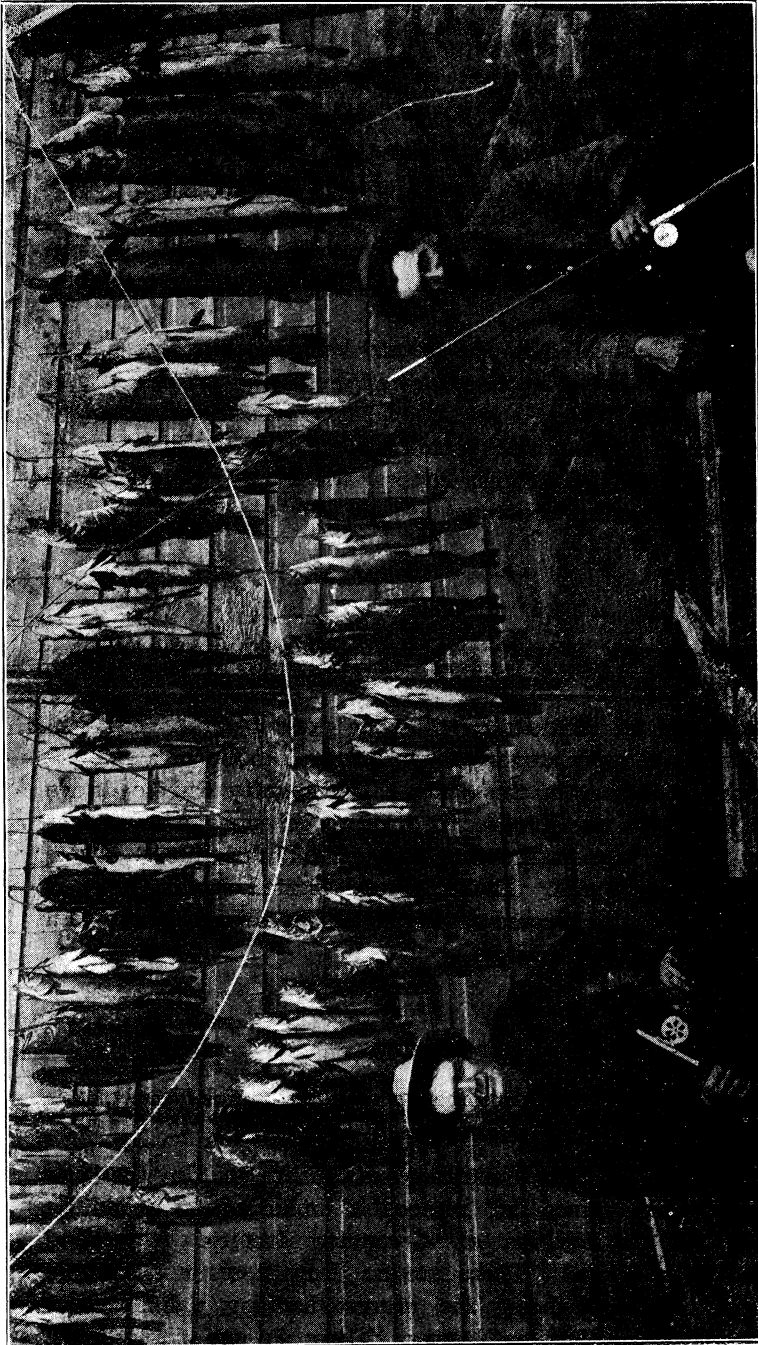
PORTAGE COUNTY.

TOWNS, CITIES AND VILLAGES.	Families.	AGGREGATE POPULATION.			COLOR.			Ex-soldiers and sailors.	Militia.
		Male.	Female.	Total.	White.	Colored.	Indians.		
Alban	203	626	556	1,182	1,182			1	223
Almond	203	529	430	959	959			6	220
Almond, village	100	218	197	415	415			6	78
Amherst	308	861	803	1,664	1,664			13	355
Amherst, village	148	284	329	613	613			16	106
Belmont	179	499	406	905	905			5	157
Buena Vista	223	620	515	1,135	1,135			15	223
Carson	308	917	800	1,717	1,717				270
Dewey	120	401	375	776	776				78
Eau Pleine	228	675	569	1,244	1,244			5	139
Grant	117	337	325	662	662			3	101
Hull	227	715	684	1,399	1,399			2	187
Lanark	133	425	418	843	843			2	165
Linwood	140	372	366	738	738			5	108
New Hope	192	505	464	969	969			6	136
Pine Grove	165	381	332	713	713			13	111
Plover	332	849	791	1,640	1,640			25	253
Sharon	311	1,166	1,043	2,209	2,209			2	333
Stevens Point, city:									
ward 1.....	280	634	770	1,404	1,404				
ward 2.....	354	702	799	1,501	1,501				
ward 3.....	357	680	809	1,489	1,489				
ward 4.....	489	1,240	1,413	2,653	2,653				
ward 5.....	293	609	688	1,297	1,297				
ward 6.....	160	321	347	678	678				
Total, city, 9,022								76	1,374
Stockton	330	1,081	975	2,056	2,056			5	334
Total	5,950	15,657	15,204	30,861	30,861			217	5,005

ALMOND.

Almond, Portage Co. Population, 415. 24 miles from Stevens Point. C. & N. R. Ry. Telephone system. Western Union telegraph. American Express.

There are at present no factories, but the surrounding country can be drawn upon for increased labor force for any factory locating here. There is one bank and two physicians but no lawyer. A weekly newspaper is published. The country surrounding Almond is good agricultural soil. A canning factory or starch factory would find this city an excellent location.



MUSCALLONGE AND PIKE.

Photo by S. A. Johnson, Phillips, Wis.

AMHERST.

Amherst, Portage Co. Population, 613. 17 miles from Stevens Point and 143 miles from Milwaukee. The Wis. Central Ry. and the G. B. & W. Ry. Telephone system. Western Union telegraph. United States and National Express.

The city of Amherst is located on the Waupaca River. Such raw materials as clay, sand, stone and timber can be obtained in abundance. There are at present no manufacturing establishments in the city. The surrounding country is not as yet very thickly settled but large quantities of fruit and vegetables are being raised.

Amherst is located in the potato belt and has five potato warehouses. There is also located here one creamery and one grist mill. There is one hotel having accommodations for forty persons. Has a weekly newspaper. The establishment of a canning factory and cheese factory would be welcomed by the city and surrounding country.

ARNOTT.

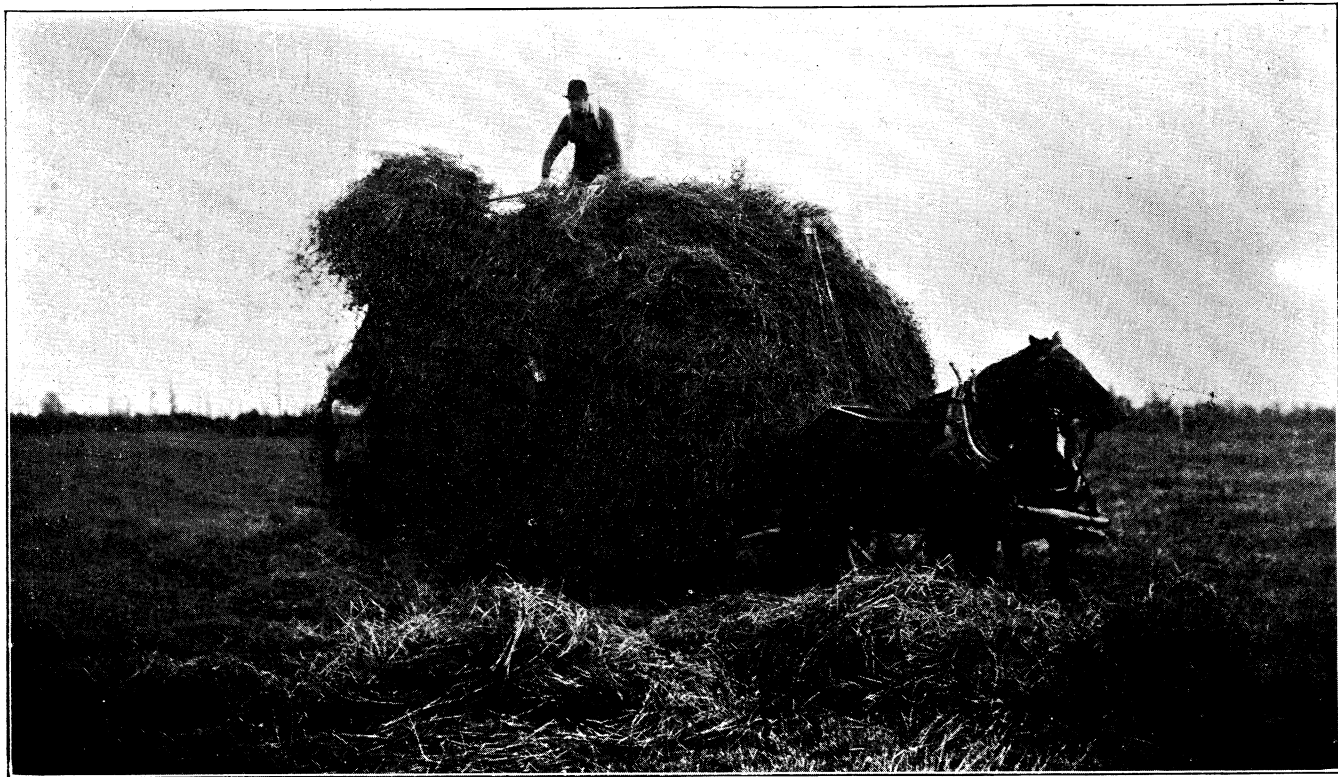
Arnott, Portage Co. Population, 300. Not incorporated. 10 miles from Stevens Point. Amherst Junction is the nearest banking center. G. B. & W. R. R. Telephone connections. Western Union telegraph. United States Express.

There are no factories here at the present time. The surrounding country is anxious to secure the location of a canning or pickling factory at this point. The country can be drawn upon for about one hundred persons to be engaged in factory labor. There is no bank and no drug store in this village. There is a small grist mill. The one hotel located at this place is hardly sufficient to accommodate the persons visiting here, and a new hotel is greatly desired.

BANCROFT.

Bancroft, Portage Co. Population, 350. 16 miles from Stevens Point. C. & N. W. Ry., and Wisconsin Central R. R. Telephone connections. Western Union telegraph. American and National Express.

There are no manufacturing establishments in the city at the present time, but reasonable inducements would be offered for the location of a canning factory. A general store is also desired. There are no drug stores nor bank in the city, Plainfield being the nearest banking point. There is one physician but no lawyer. There is one small hotel.



TIMOTHY HAY IN PRICE COUNTY.

One saw mill and several potato warehouses are located at this point. There is a church and a public school.

PLOVER.

Plover, Portage Co. Population, 450. 6 miles from Stevens Point. G. B. & W. Ry., and Wis. Central Ry. Telephone system. Western Union telegraph. United States and National Express.

There is an excellent water power in this village not all utilized. There are located here three potato warehouses and two paper mills a short distance from the village. There is no bank. There is one physician but no lawyer. Large quantities of vegetables are raised in the country surrounding Plover and inducements will be offered for the location of a canning and pickling factory. There is a small hotel with accommodations for about fifteen. There are no boarding houses.

ROSHOLT.

Rosholt, Portage Co. Population, 400. 18 miles from Stevens Point. C. & N. W. Ry. Telephone system. Western Union telegraph. American Express.

Rosholt is a new town having been established but a few years ago. There are at present in this city 1 saw mill 1 feed mill, 2 planing mills, 1 creamery and 5 potato warehouses in addition to the usual number of stores and repair shops. There are no manufacturing plants located here and 1 or 2 small factories will be furnished reasonable inducements to locate here. There are 2 hotels and 1 boarding house.

STEVENS POINT.

Stevens Point, Portage Co. Population, 9,022. 87 miles from Green Bay, 108 miles from Madison and 159 miles from Milwaukee. G. B. & W. R. R., and Wis. Central R. R. No electric railways. Waterworks, gas plant, electric lighting plant and telephone system. Western Union telegraph. National and United States Express.

Stevens Point is located on both sides of the Wisconsin River which furnishes the city with a water power, only partially developed and which is surpassed by but a few places in the northwest, making the outlay for power in this city but a comparatively small item in the manufacturing cost.

Lumbering is the principal industry, the city being situated at the base of the Wisconsin forests. Such raw materials as sand, clay, peat, stone and timber are found near the city. The country surrounding this city is not as yet thickly settled, but fruits and vegetables are being raised in large quantities. The city is the center of one of the richest potato growing sections in America.

In 1905 there were 37 manufacturing establishments, with an aggregate capitalization of \$952,539, employing 598 wage-earners and having a product of \$1,516,072. The principal manufacturing products are lumber, paper, wall paper, gas engines, furniture, boxes and sash, doors and blinds. There are no unoccupied factory buildings in the city.

Stevens Point has 3 banks, a daily paper, several weekly papers one of which is Polish, and 8 hotels. A new and modern hotel is desired. There are 10 churches representing the leading denominations, two of which are German and one Norwegian. The city has an excellent system of public schools. There is also a business college and the city is the location of one of the state normal schools.

PRICE COUNTY.

Price County is located in the north central part of the state. The area is 1,241 square miles. The population in 1905 was 12,353, showing a gain of 3,247 over the census of 1900. Nearly one-third of this population is foreign of which number Swedes and Germans represent the majority. Price county is but sparsely settled. Having been the center of a great lumber industry, it presents to-day many thousands of acres of cut-over lands, all available for agricultural purposes but as yet scarcely touched. In 1890 the total improved acreage under cultivation was but 5,160 acres. In 1905 the total farm area was 116,791 acres of which 18,855 acres were improved. This latter figure represents less than 3% of the total area of the county. During the last fifteen years the valuation of the farm lands including improvements increased from \$365,780 to \$1,774,791. The surface of the county, except in close proximity to the stream channels, is rolling rather than hilly. Irregular mounds and ridges occur in various parts of the county as a result of glacial deposition.

In the southern part of the county the surface is characterized by belts of ridges and billowy hills associated with some deep depressions and swamps. Many of the ridges have very steep slopes and rise to a height over one hundred feet above the surrounding land. The soils covering the larger part of the county are a light clayey loam. In the northeastern part there is a large tract of sandy loam. There are numerous irregular areas of humus soils, composed mainly of muck and peat, scattered throughout the county. Wherever land has been cleared in this county, excellent crops have been raised. The chief products are oats, barley, rye and hay. Dairying and sheep raising are destined to become important interests. Already four creameries have been established. Unimproved lands in this county, such as can be made tillable, are selling at from \$5.00 to \$10.00 per acre. The price of improved lands ranges from \$35.00 to \$50.00 per acre, according to location and state of cultivation. The county seat is Phillips. The population of the cities, villages and towns of the county in 1905 was as follows:

PRICE COUNTY.

TOWNS, CITIES AND VILLAGES.	Families.	AGGREGATE POPULATION.			COLOR.				Militia.
		Male.	Female.	Total.	White.	Colored.	Indians.	Ex-soldiers and sailors.	
Brannan	129	320	271	591	591				95
Catawba	93	239	181	420	420			1	90
Emery	81	214	172	386	386			1	71
Elsenstein	56	176	155	331	331				55
Fifield	111	296	230	526	526			7	125
Park Falls, village.....	311	797	641	1,438	1,438			7	355
Georgetown	63	187	149	336	336			3	71
Hackett	60	142	120	262	262				44
Hill	49	132	102	234	234				44
Kennan	55	162	139	301	301				58
Kennan, village	54	134	111	245	245				62
Knox	166	472	372	844	844				111
Lake	96	259	216	475	475			8	50
Ogema	250	645	484	1,129	1,128		1		227
Prentice	113	314	261	575	575			4	110
Prentice, village	166	434	429	863	861		2	2	162
Phillips, city:									
ward 1.....	150	392	345	737	735		2		
ward 2.....	146	335	259	634	634				
ward 3.....	146	337	303	640	640				
Total, city.....	2,011							8	453
Worcester	278	764	622	1,386	1,386			3	243
Total	2,573	6,751	5,602	12,353	12,348		5	51	2,426



PRICE COUNTY APPLES.

CATAWBA.

Catawba, Price Co. Population, 250. An unincorporated village located on M. St. P. & S. Ste. M. Ry., in the southwestern part of the county 16 miles southwest of Phillips the county seat, and 12 miles west of Prentice, both of which places afford banking facilities, and 160 miles from Minneapolis, Western Express. Telegraph and telephone. Good freight facilities and passenger service.

The village is supplied with 2 general stores, 1 grocery store, a state graded school employing 3 teachers, Catholic and Lutheran churches, 2 hotels, an opera hall, blacksmith shop, a saw, planing and shingle mill. Good location for a cheese factory.

The country surrounding the village is gently rolling, nearly level and the soil is a clayey loam, adapted to all kinds of farm produce, and especially to dairying. Lumbering is the principal industry. There is a large amount of hardwood and hemlock timber which makes this a good location for a veneer factory, stave and heading mills, woodenware and furniture factories.

OGEMA.

Ogema, Price Co. An unincorporated village with a population of 250, located on the Wisconsin Central Ry., in the southern part of the county, 19 miles from Phillips, the county seat, 7 from Prentice, the nearest banking point, 97 from Ashland, 169 from Superior, 90 from Chippewa Falls, and 240 from Milwaukee. National Express. Telegraph and telephone. Good shipping facilities and passenger service.

The village has 1 drug store, 3 hardware and 4 general stores, 1 hotel, 1 boarding house, graded public school employing 2 teachers, 2 physicians, harness shop, tailor shop, blacksmith shop, saw and planing mill and a creamery.

Wood is used for fuel obtained from the surrounding country. The village can be supplied with clay, sand, timber and stone. There is plenty of help to be had here. This is a good location for a manufacturing plant using timber products.

The surrounding country is suitable for farming and is only about $\frac{1}{3}$ improved. East of the village the country is hilly, but the larger part is level and free from stone. The soil is fertile and but very little swampy and sandy.

PARK FALLS.

Park Falls, Price Co. Population, 1,438. An incorporated village located on the Wisconsin Central Ry., and on the Flambeau river, in the northern part of the county, 14 miles north of Phillips, the county seat, 59 miles from Ashland, 122 miles from Superior, and 127 miles from Chippewa Falls. National Express. Good shipping facilities and passenger service.

This village has been building up quite rapidly in the last few years. Has graded streets well kept up, plank walks, numerous small shade trees, is lighted by electricity, has 2 banks,



Photo by S. A. Johnson, Phillips, Wis.

THE BEGINNING.

1 drug store, 3 groceries, 2 hardware and 4 general stores, furniture store, excellent high and public schools employing 9 teachers, Catholic, Congregational and German Lutheran churches, 3 physicians and 1 dentist, 1 lawyer, 3 hotels, 2 boarding houses, 2 restaurants, 1 jeweler, barber shop, meat market, blacksmith shop, a photographer and a tailor shop. The manufacturing industries include 2 large saw mills, excelsior mill, heading mill, stave, shingle, lath and paper mills, planing mills, pulp mills and a creamery. A weekly newspaper is published.

Timber is the principal natural product and there is plenty of sand and stone for building purposes. Help can be secured here.

The surrounding country is good for farming and only about 10 per cent of the land suitable for crop raising is improved. The soil is a rich clayey loam and is very productive. The country is rolling, some surface rocks, very little swampy and no sand. This section was originally one of the best timbered portions of northern Wisconsin and is yet comparatively new making this village a natural location for any kind of woodworking establishments. There is a good opening here and good inducements will be offered for a basket factory, box factory, furniture factory and a foundry and machine shop.

PRENTICE.

Prentice, Price Co. Population, 888. Is an incorporated village located at the junction of the Wisconsin Central and the M. St. P. & S. Ste. M. Ry's., in the southeastern part of the county, 12 miles southeast of Phillips, the county seat, 90 miles from Ashland, 162 miles from Superior, 177 miles from Minneapolis and 247 miles from Milwaukee. Express, National and Western. Telegraph and telephone. Excellent shipping facilities and passenger service.

The village has a public park, good streets, a bank, 1 drug store, 2 groceries, 1 hardware and 2 general stores, 3 hotels, high and graded public school employing 9 teachers, Adventists, Baptist, Catholic, Congregational and Lutheran churches, 2 physicians, 2 lawyers, saw and planing mill, a tannery, a stave mill, a machine shop and foundry and a creamery. Two weekly newspapers are published. The village is a good location for a brick yard and woodworking factories.

There is a good water power here, with 1000 H. P. not utilized. Wood is used for fuel obtained from the adjacent forests. Vegetables are the only raw materials which can be furnished for canning. The village can be supplied with clay, sand and timber in large quantities, especially timber. Plenty of help can be secured here to work the entire year.



PRICE COUNTY CORN.

The village is surrounded by a good farming country and about $\frac{1}{3}$ of the land suitable for crop raising is improved. The soil is a clayey loam, no sand and but very little swampy.

PHILLIPS.

Phillips, Price Co. Population, 2,011. Located 78 miles from Ashland, 109 miles from Stevens Point, 217 miles from Madison and 268 miles from Milwaukee. Wisconsin Central R. R. There are no electric lines. Has waterworks and electric lighting plant. There is no gas plant. Has telephone system. Western Union telegraph. National Express. County seat.

Phillips is an important center of the lumber industry and the site of two large saw mills and a box factory. It is located on a water power stream which is only partially developed. Factories largely dependent upon the timber supply, such as vehicle works, box factories, spoke factories, etc., would find Phillips an excellent location. Two banks furnish ample banking facilities. There are four churches and two weekly newspapers. The city has an excellent school system.

RACINE COUNTY.

Racine County is located in the southeastern part of the state on Lake Michigan. It is small in area, having but 323 square miles. The great majority of the population is urban. In 1905 the population was 50,228, a gain of 4,584 over the census of 1900. Over one-fourth of the population is foreign born, Germans and Danes being by far the most numerous. All the available land has been occupied for agricultural purposes. The value of the farms in 1905, including improvements was \$13,345,130. The surface of the county is generally level or slightly rolling. In the western part occur hills and ridges comprising a part of one of the terminal moraines. The soil covering the larger part of the county is mainly light and medium varieties of clayey loams, the heavier loams being in the north central part extending down from Waukesha county. The soil extending over the central part is a rich prairie loam. The only considerable area of sandy soil occurs in the eastern part of the county bordering on Lake Michigan. Irregular areas of humus solids are found in the different parts. Throughout the county the soil is excellent for general agricultural purposes. Owing to the excellent markets afforded by the nearby large cities, truck farm-

ing is growing rapidly. The leading crops and the acreage devoted to each in 1890 and 1905 were approximately as follows:

	Acreage in 1890.	Acreage in 1905.
Oats	22,715	26,015
Barley	5,741	3,310
Corn	15,251	25,417
Rye	1,140	1,685
Hay	43,956	40,513

A considerable acreage is devoted to the growing of sugar beets and vegetables. The dairy industry is well developed, there being in 1905, 18 creameries and 3 skimming stations. There is practically no unimproved land in the county except such small tracts as are owned in connection with improved lands. These unimproved lands average in price about \$45 per acre. Improved farm land ranges in price from \$60 to \$90 per acre, with a few tracts at even higher prices. Racine is the county seat. The table on page 736 shows the population statistics of the cities, villages and towns of the county in 1905.

BURLINGTON.

Burlington, Racine Co. Population 2,625. Located in southwestern part of the county on the C., M. & St. P. Ry. and Wisconsin Central Ry., 76 miles from Chicago and 43 miles from Milwaukee. No electric railways or gas company. Public water system. Electric lighting. Telephone connections. Stages daily to neighboring towns. National and United States Express.

Burlington is located in a rich farming country at the confluence of the Fox and White rivers. Coal is the chief fuel which is obtained from Illinois. Clay, sand, peat and stone can be obtained near the city. Fruit and vegetables can be supplied in large quantities for canning factories. Additional labor can be obtained from the surrounding country. There is an unoccupied canning factory in the city at present. The leading industries are the manufacture of flour, malt, brick and tile, blankets, machinery, agricultural implements, cheese and condensed milk. Three weekly newspapers are published. The city annually attracts a large number of summer visitors.

RACINE COUNTY.

TOWNS, CITIES AND VILLAGES.	Families.	AGGREGATE POPULATION.			COLOR.			Ex-soldiers and sailors.	Militia.
		Male.	Female.	Total.	White.	Colored.	Indians.		
Burlington	214	581	548	1,129	1,129	.....	.....	4	232
Burlington, city:									
ward 1.....	143	267	275	542	542	.....	.....	.....	.....
ward 2.....	199	354	412	766	766	.....	.....	.....	.....
ward 3.....	143	319	394	713	713	.....	.....	.....	.....
ward 4.....	150	290	314	604	604	.....	.....	.....	.....
Total, city, 2,625								24	461
Caledonia	613	1,738	1,435	3,173	3,172	1	.....	6	708
Dover	188	472	399	872	862	.....	.....	3	182
Mt. Pleasant	696	2,010	1,647	3,657	3,654	3	.....	3	778
Norway	159	544	437	981	930	.....	1	5	207
Racine, city:									
ward 1.....	233	593	427	1,020	1,014	6	.....	.....	351
ward 2.....	634	1,418	1,568	2,986	2,985	1	.....	.....	523
ward 3.....	926	1,993	2,119	4,112	4,084	28	.....	.....	893
ward 4.....	786	1,823	1,798	3,621	3,612	9	.....	.....	785
ward 5.....	577	1,392	1,260	2,652	2,643	*9	.....	.....	662
ward 6.....	500	1,104	998	2,102	2,102	.....	.....	.....	500
ward 7.....	1,001	2,477	2,424	4,901	4,900	1	.....	.....	1,035
ward 8.....	488	1,076	1,102	2,178	2,178	.....	.....	.....	534
ward 9.....	577	1,427	1,301	2,728	2,728	.....	.....	.....	609
ward 10.....	654	1,759	1,495	3,254	3,249	5	.....	.....	819
ward 11.....	581	1,417	1,319	2,736	2,736	.....	.....	.....	665
Total, city, 32,290								162	.....
Raymond	344	848	723	1,571	1,571	.....	.....	11	295
Rochester	183	372	367	739	739	.....	.....	7	138
Waterford	357	806	766	1,572	1,572	.....	.....	14	327
Yorkville	241	599	486	1,085	1,085	.....	.....	6	248
Union Grove, village..	167	265	279	544	544	.....	.....	9	84
Total	10,794	25,944	24,284	50,228	50,164	63	1	199	11,041

*2 Chinamen.

RACINE.

Racine, Racine Co. Population 32,290. Situated on Lake Michigan at mouth of Root river, 25 miles from Milwaukee and 60 miles from Chicago. C. & N. W. Ry. and C., M. & St. P. Ry. Electric lines to Milwaukee and to the south. The harbor accommodates the largest lake vessels and with the docks along the river furnishes excellent facilities for forwarding and receiving large quantities of freight. Two steamship lines, the Goodrich and Barry Bros. companies carry both freight and passengers and connect all points on the great lakes. Postal and western Union telegraph companies. Adams, American and United States express companies. Two good telephone systems.

Racine offers excellent opportunities to the home-seeker and the manufacturer seeking a location. There is plenty of land in and near the city suitable for manufacturing purposes, especially desirable tracts being available along the Root River. Racine has the largest manufacturing industry in comparison with its population of any city in the country. In 1905 it had 148 manufacturing establishments with a capitalization of \$26,433,684. These plants employed 1,239 salaried officials and clerks and 6,504 wage-earners. The

total value of the products was nearly \$17,000,000. An unusually large proportion of the population own their homes. The city has 3 banks, 3 daily and 6 weekly newspapers. It has an excellent street car system reaching all parts of the city and suburbs. There is a good water-works system and an up-to-date gas plant. There are no unoccupied or idle factories in the city. For a number of years there has been a strong demand for labor, which has continued unbroken, due to the great diversity of the manufactured products of the city. The leading products are agricultural implements, wagons and carriages, furniture, machinery and boilers, boots and shoes, factory made garments, malleable iron, medicines, steel axles, boats, etc. Owing to the large local consumption of iron and steel there is need for a rolling mill. There are enough plants in Racine using rolling mill products to take the entire output of a large factory.

The surrounding territory is thickly settled and is drawn upon for increased labor. The city has adopted a very progressive policy towards manufacturing establishments and while it gives no free sites or bonuses, such assistance is given to substantial concerns through the Racine Business Men's Association consisting of over two hundred of the leading business and professional men of the city.

UNION GROVE.

Union Grove, Racine Co. An incorporated village with a population of 544. 12 miles from Burlington and 15 miles from Racine, the county seat. C., M. & St. P. Ry. Telephone system. Western Union telegraph. United States Express.

There is no water power. Coal is used for fuel which is obtained from Illinois. Fruit and vegetables are raised in large quantities. Sand, peat and an excellent quality of clay is found near the village. There are in this village 1 bank, 3 physicians, 2 dentists, 1 lawyer, 1 weekly paper, 1 hotel of twenty rooms, the usual number of stores and 3 churches. There is 1 public school employing 6 teachers. A weekly paper is published. The village each year cares for a large number of summer visitors.

WATERFORD.

Waterford, Racine Co. Population 800. Located on the Fox river 22 miles from Racine and 7 miles from Burlington, its shipping point. Telephone system. Daily stage connection with Burlington.

Vegetables and fruit can be raised in large quantities to supply canning factories. Clay, sand and stone are found near the city. Labor can be secured from the surrounding country which is a well settled agricultural district. There are in this town 1 bank, 1 drug store, 6 groceries, 2 hardware stores and 4 dry goods stores. There are 3 physicians, 2 lawyers, and a weekly newspaper. Waterford is somewhat of a summer resort and with the construction of an electric line which is promised, the number of summer visitors will be largely increased.

RICHLAND COUNTY.

Richland county is located in the southwestern part of the state on the Wisconsin river. It has an area of 576 square miles. The population in 1905 was 19,334, of which number one-sixth were foreign born. Germans represent the largest foreign element, with Norwegians, Irish and English following in the order here given. Being one of the earlier settled counties, practically all of the land suitable for agricultural purposes has been put under cultivation. In 1905 the farm area was 348,306 acres, of which amount 189,217 acres or 54% were improved. In 1890 the total farm area was 326,409 acres, of which 159,276 acres had been improved. The topography of the county is very rough and hilly. Numerous hills and high rolling ridge lands cover the surface, and are intersected by streams and valleys causing precipitous cliffs and very abrupt slopes. The county is well watered and drained by numerous small streams, tributary to the Baraboo, Kickapoo and Wisconsin rivers. The soil of the county is a loamy clay of the medium and heavier varieties. This is a very fertile soil and unsurpassed in quality. It is well adapted to general farming and to dairying and stock raising in particular. All crops do well on this soil. Along the Wisconsin river and its leading tributaries the soil is sandy or a sandy loam. The valley of the Pine river is rather swampy, but with increased cultivation and improved drainage nearly all of it is now devoted to hay and pasture lands. The principal farm

products of the county and the acreage devoted to each in 1890 and 1905 were as follows:

	Acreage in 1890.	Acreage in 1905.
Wheat	16,307	2,986
Oats	21,743	22,889
Barley	5,869	4,203
Rye	2,073	2,718
Corn	24,812	28,321
Hay	35,026	46,533

The dairy industry has recently grown to a position of importance, there being 43 cheese factories, 13 creameries and 13 skimming stations in the county in 1905, is destined to occupy a still more favorable position in the income of the community. Sheep raising and wool growing is also a leading industry, the county ranking second in the state in the number of sheep. The price of unimproved land which can be brought under cultivation averages about \$25 per acre. Improved lands range in price from \$50 to \$80 per acre. The largest city is Richland Center, which is also the county seat. The following table shows the population of the cities, towns and villages of the county in 1905:

RICHLAND COUNTY.

TOWNS, CITIES AND VILLAGES.	Families.	AGGREGATE POPULATION.			COLOR.			Ex soldiers and sailors.	Militia.
		Male.	Female.	Total.	White.	Colored.	Indians.		
Akan	179	475	405	880	880		8	130	
Bloom	273	642	597	1,239	1,239		28	217	
Buena Vista	234	534	473	1,007	1,007		14	179	
Lone Rock, village.....	130	296	3 8	604	604		13	115	
Dayton	233	535	479	1,014	1,014		10	197	
Eagle	205	499	456	955	955		13	150	
Forest	165	417	362	779	779		18	165	
Viola, village	89	192	180	372	372		14	83	
Henrietta	235	585	523	1,108	1,108		21	223	
Ithaca	185	458	411	869	869		4	170	
Marshall	184	444	4 5	849	849		18	160	
Orion	200	486	442	928	928		24	160	
Richland	170	504	414	918	918		9	153	
Richland Center, city:									
ward 1.....	234	452	454	906	904	2			
ward 2.....	261	474	489	963	962	1			
ward 3.....	23	340	426	766	766				
Total, city...2,635							65	467	
Richwood	284	663	605	1,268	1,268		31	233	
Rockbridge	194	486	430	916	916		19	157	
Sylvan	183	447	379	826	826		15	153	
Westford	143	425	363	788	788		3	153	
Cazenovia, village	78	200	198	398	398		1	50	
Willow	220	506	486	992	984	8	21	169	
Total	4,232	10,060	9,285	19,345	19,334	11	344	3,499	

BOAZ.

Boaz, Richland Co., is an unincorporated village of about 300 population located $8\frac{1}{2}$ miles from Richland Center the nearest railroad station. Has telephone.

This village is supplied with a bank, drug store, a grocery, a general store, a hardware, 1 grist mill, 2 feed stores, 2 saw mills, and cheese factory. One physician is located here. Any wood working establishment is best suited for the place. A small water power could be developed. Such raw materials as clay, sand, stone, timber, small fruit and vegetables can be supplied. A first-class hotel is desired.

This village is located in a very fertile valley where the farmers are all well-to-do. Dairying and stock raising are the chief occupations.

CAZENOVIA.

Cazenovia, Richland Co., is an incorporated village of 398 people, is seven miles from La Valle, the nearest railroad station. Has telephone.

A railroad is in course of construction to this town from La Valle. When this is completed, Cazenovia will afford a splendid opportunity for a hotel, tobacco warehouse or a starch factory. Plenty of help can be procured. At present the village has neither bank, drug store, electric light plant or hardware store, but is supplied with 3 general stores, a meat market, furniture store, a hotel, 1 physician and a public school employing 4 teachers.

Some of the best farms in the state are located in this neighborhood.

EXCELSIOR.

Excelsior, Richland Co., is an unincorporated village having a population of about 200; is located 8 miles from Blue River, the nearest railroad station. Telephone.

Excelsior has a splendid undeveloped water power. Such raw materials as clay, sand, stone, timber, small fruit and vegetables can be supplied, and plenty of help secured. A canning factory or wood working establishment is best suited for the place. The village is supplied with a drug store, grocery, hardware store, 2 general stores, a hotel, 2 physicians and a graded school.

This village is in the heart of a prosperous farming region where tobacco culture is becoming a leading industry.

LONE ROCK.

Lone Rock, Richland Co., is an incorporated village with a population of 604; is located on the C., M. & St. P. Ry. 43 miles from Madison, 125 miles from Milwaukee and 174 miles from Chicago. Telegraph and telephone. Good facilities for receipt and shipment of freight. Five passenger trains daily. United States Express.

Such raw materials as timber, sand, stone, small fruit and vegetables can be supplied and any industry utilizing these is best suited for the place. Help is plentiful. The village is supplied with a bank, drug store, 5 groceries, 2 hardwares, 4 general stores, harness shops, millineries, jewelry store, 2 hotels, 2 boarding houses, 3 physicians, an attorney-at-law, a high school, and 3 boarding houses. A weekly newspaper is published.

The land in this vicinity is level and the soil is sandy.

RICHLAND CENTER.

Richland Center, Richland Co., is a city having a population of 2,635; is located on the C., M. & St. P. Ry. 16 miles from Lone Rock, 59 miles from Madison, 190 miles from Chicago and 141 miles from Milwaukee. Good facilities for receipt and shipment of freight. Good passenger service. Telegraph and telephone. United States Express.

A furniture or canning factory is best suited for this place. Such raw materials as small fruit, vegetables, sand, clay, stone and plenty of hardwood lumber can be supplied, and help secured. The city is supplied with an electric light plant, 2 banks, 4 drug stores, 12 general stores, 2 restaurants, 2 jewelry stores, 3 meat markets, 2 feed stores, 1 second-hand store, 3 newspapers, 2 lumber yards, 1 excelsior mill, saw and planing mill, 1 flour mill, 2 cooper shops, 1 machine and repair shop, 2 tailor shops, 2 plumber shops, 1 shoe store, 3 furniture stores, 1 marble shop, 2 hotels, several boarding houses, a high school, 9 physicians, 5 attorneys-at-law, good macadamized streets and cement walks, and plenty of shade trees.

This city is in the Pine river valley, where some of the richest lands in the state are to be found. Dairying and stock raising are the leading occupations of the farmers.

VIOLA.

Viola, Richland Co., is an incorporated village having a population of 372 inhabitants, located on the C., M. & St. P. Ry., 45 miles from Wauzeka, 125 miles from Madison and 207 miles from Milwaukee. Telephone. Fairly good freight and passenger facilities. United States Express.

This village is a good location for an electric light plant, a lumber yard or canning factory. A good water power can easily be developed here. Plenty of help can be secured in the vil-

lage and the adjacent country. Viola has a bank, 2 drug stores, 2 groceries, 2 hardwares, 4 dry good stores, an excelsior mill, 2 flouring mills, a tobacco warehouse, a saw and planing mill, 2 barber shops, 2 hotels, 2 boarding houses, 3 physicians, a high school employing 4 teachers, and a newspaper.

Viola is situated in the Kickapoo valley. The land of this valley is very fertile and dairying and tobacco raising is the leading occupation of the farmers.

ROCK COUNTY.

Rock county is located in the southern part of the state on the Illinois boundary line. The area is 706 square miles. In 1905 the population was 53,641, a gain of 2,438 over 1900. Only one-sixth of the population is of foreign birth, and of this number, Germans and Norwegians represent a majority. Practically all the land which is available for agricultural purposes has been placed under cultivation. The total farm area in 1905 was 420,174 acres, of which amount 355,729 acres are improved. The total value of the farm lands including improvements in 1905 was \$27,230,180, as against \$21,344,840 in 1890. The surface of the county, with the exception of Rock river valley, is rolling or hilly. The soils throughout the county are mainly light clayey and prairie loams, the latter being of very fertile quality and more general in the central part of the county. Glacial drift covers all parts of the county, being heaviest in the northern part. This drift consists of gravel, sand and boulder clay and occurs in ridges, hills and sheets covering the originally irregular land surface. In the northern and western parts, the soils are principally sandy loams. Irregular areas of humus soils occur along the stream channels in the western half of the county. Rock county is one of the wealthiest agricultural districts in the state. The leading crops and acreage devoted to each in 1890 and 1905 were as follows:

	Acreage in 1890.	Acreage in 1905.
Oats	53,679	48,102
Barley	31,324	25,916
Rye	5,099	8,853
Corn	72,693	89,047
Hay	67,614	58,742
Tobacco	5,994	6,000

The tobacco acreage has shown a decline during the last few years owing to the rapid growth of the sugar beet industry. In 1900 the tobacco acreage was 9,988 acres while practically no sugar beets were grown. In 1905 over 3,000 acres were devoted to the raising of sugar beets. Rock county is situated in Wisconsin's richest dairy district and this industry has grown very rapidly. In 1905 there were 15 cheese factories, 37 creameries and 9 skimming stations. Small tracts of unimproved lands, such as are owned in connection with improved farms average in price about \$50.00 per acre. Improved lands range from \$60.00 to \$100.00 per acre. Janesville is the county seat. The table on page 744 shows the population statistics of the cities, villages and towns of the county in 1905.

BELOIT.

Beloit, Rock Co. Population, 12,855. 14 miles from Janesville, 54 miles from Madison and 75 miles from Milwaukee. C. & N. W. Ry., and C. M. & St. P. Ry. Electric railway to Rockford and Janesville. Water-works, gas plant, electric plant and telephone system. Western Union and Postal telegraph. American and United States Express.

Beloit, situated on the Rock river which has furnished an excellent waterpower, has developed into one of the principal manufacturing cities of Wisconsin. In 1905 there were 44 manufacturing establishments with an aggregate capital of \$3,739,442, employing an average of 2,471 wage-earners and having a total product of \$4,485,224. The growth of manufacturing in this city has been exceedingly rapid, and the establishments now located are nearly all old and large companies. During the last five years the capital invested in manufacturing increased 49%; number of wage-earners increased 34% and total product increased 60%. The principal products manufactured are gas engines, tanks, steam pumps, wood-working machinery, agricultural implements, scales, machine knives, garments, shoes and cigars.

ROCK COUNTY.

TOWNS, CITIES AND VILLAGES.	Families.	AGGREGATE POPULATION.			COLOR.			Ex-soldiers and sailors.	Militia.
		Male.	Female.	Total.	White.	Colored.	Indians.		
Avon	158	424	316	740	740	.....	.....	4	93
Beloit	154	415	350	765	765	.....	.....	4	147
Beloit, city:									
ward 1	420	858	848	1,706	1,635	71	.....	6	383
ward 2	853	1,795	1,757	3,552	3,544	8	.....	13	849
ward 3	484	1,038	1,619	2,057	2,057	.....	.....	14	493
ward 4	673	1,282	1,267	2,549	2,546	3	.....	23	584
ward 5	691	1,503	1,488	2,991	2,991	.....	.....	16	652
Total, city..12,855									
Bradford	196	501	430	931	931	.....	.....	4	205
Center	221	552	479	1,031	1,031	.....	.....	2	189
Clinton	207	542	468	1,010	1,010	.....	.....	5	224
Clinton, village	269	414	478	892	892	.....	.....	29	155
Edgerton, city:									
ward 1	203	426	439	865	865	.....	.....	.....	114
ward 2	208	429	461	890	890	.....	.....	.....	140
ward 3	149	334	327	661	661	.....	.....	.....	122
Total, city..2,416									
Evansville, city:								48	.....
ward 1	145	255	294	549	546	3	.....	.....	.....
ward 2	206	310	339	699	699	.....	.....	.....	.....
ward 3	192	348	367	715	715	.....	.....	.....	.....
Total, city..1,963								48	370
Fulton	173	655	569	1,224	1,224	.....	.....	8	241
Harmony	257	588	550	1,138	1,132	6	.....	6	204
Janesville	180	598	524	1,122	1,116	6	.....	9	161
Janesville, city:									
ward 1	659	1,414	1,344	2,758	2,749	*9	.....	24	630
ward 2	519	1,050	1,137	2,187	2,181	6	.....	29	471
ward 3	840	1,570	1,721	3,291	3,291	.....	.....	51	670
ward 4	802	1,732	1,925	3,657	3,614	*13	.....	23	627
ward 5	438	956	921	1,877	1,876	.....	.....	3	451
Total, city..13,770									
Johnstown	215	473	445	918	918	.....	.....	2	198
La Prairie	178	477	397	874	874	.....	.....	4	185
Lima	221	543	464	1,007	1,007	.....	.....	14	230
Magnolia	202	455	444	899	899	.....	.....	8	179
Milton	422	796	853	1,649	1,643	6	.....	31	264
Milton, village	231	385	425	810	808	2	.....	30	129
Newark	197	495	429	924	924	.....	.....	3	209
Plymouth	3 3	702	650	1,352	1,350	.....	.....	15	272
Porter	211	591	485	1,076	1,076	.....	.....	5	227
Rock	200	505	425	930	930	.....	.....	5	193
Spring Valley	218	535	465	1,000	1,000	.....	.....	1	232
Orfordville, village	123	225	214	439	439	.....	.....	7	81
Turtle	231	552	475	1,027	1,027	.....	.....	12	174
Union	2 8	486	393	879	877	2	.....	9	188
Total	12,437	27,209	26,432	53,641	53,503	138	.....	484	10,925

*3 Chinamen.

There is a large amount of land adjoining the railroad tracks which is especially adapted for manufacturing purposes, having shipping facilities over both railways. Free sites can be obtained by any substantial institutions. The surrounding country can be drawn upon for a large increase in the labor force. Any kind of manufacturing establishment will be wel-

comed. There are no unoccupied manufacturing plants in the city at present, with the exception of an old structure formerly utilized as a flour mill.

The country surrounding Beloit, which is a rich agricultural district, can furnish fruit and vegetables in large quantities, making the city a good location for a canning factory. Sand, peat and gravel are also found in large quantities near the city.

Beloit has an excellent public school system and is the location of Beloit College. It has two excellent parks on the Rock river which are reached by an interurban railway. The progressive business spirit of the city is represented by the Beloit Advancement Association.

CLINTON.

Clinton, Rock Co. Population, 892. 74 miles from Milwaukee, 13 miles from Janesville. C. M. & St. P. Ry., and C. & N. W. Ry. No electric railways. There is a waterworks system, gas plant, two telephone systems, but no electric light plant. Western Union telegraph; American and United States Express.

Being located at the junction of Wisconsin's two largest railways, Clinton offers excellent shipping facilities for any manufacturing establishment. The city has practically no manufacturing at the present time but it is desirous of securing one or two small factories. There is an excellent quality of limestone and a large deposit of clay within a short distance from the city and near the railroad. There are in Clinton 2 hotels, 1 bank, 2 grain elevators, a feed mill, a creamery and the usual number of stores.

The country surrounding Clinton is a fertile agricultural district with practically no waste land. A large business is carried on in the raising of seed grains and seed potatoes.

EDGERTON.

Edgerton, Rock Co. Population, 2,416. 12 miles from Janesville, 25 miles from Madison and 71 miles from Milwaukee. C. M. & St. P. Ry. There is no electric line at present but an interurban railway is promised for the near future. The city has waterworks, electric light and telephone system, but no gas plant. United States Express. Western Union telegraph.

Labor to the amount of 3,000 employes can be obtained from the surrounding country. Clay, sand, timber and stone can be supplied in large quantities near the city.

Edgerton lies in the center of a rich tobacco growing district which has made this city the center for the packing and

handling of Wisconsin's tobacco product. In this industry it is not exceeded by any city in the North-west. There are at present in this city forty-nine tobacco warehouses, employing over 2,000 people during the winter months. New industries are desired to furnish employment to this large number of people during such times of the year when the tobacco warehouses are not in operation. Canning factories, shoe factories, cigar and tobacco companies, are especially desired. Edgerton also has a chemical laboratory, box factory and an extensive brick and tile factory and art clay works. The Edgerton Advancement Association is actively engaged in advertising the city.

EVANSVILLE.

Evansville, Rock Co. Population, 1,963. 16 miles from Janesville, the county seat, 24 miles from Madison and 105 miles from Milwaukee. C. & N. W. R. R. Electric lighting plant. Telephone system. Western Union telegraph. American express.

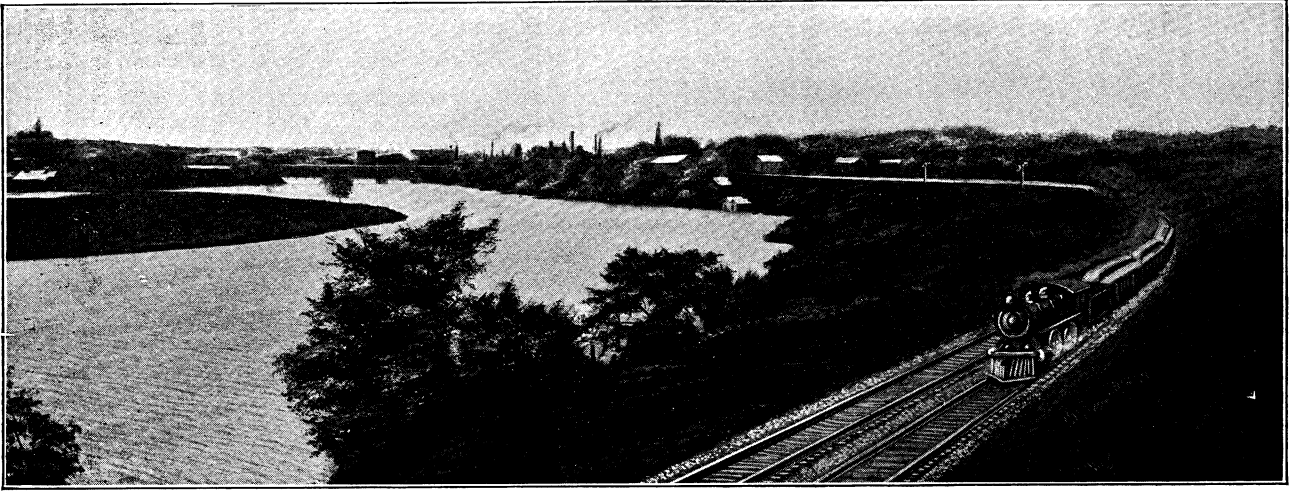
Evansville is situated at the junction of two branches of the Chicago & Northwestern railway, making it the commercial center of a large part of the county. The city is located in the center of one of the richest dairying and farming communities in the state. The sorting and casing of tobacco is a leading industry, there being four large tobacco warehouses. There is also an extensive plant for the manufacture of windmills. A canning factory, cigar factories, and agricultural implement works are best suited to this city. Land in abundance can be obtained for factory sites, and other reasonable inducements are offered to secure the industrial development of the city. Such raw materials as sand, stone and lumber can be obtained in large quantities. Coal is the principal fuel which is obtained at reasonable rates from Illinois.

Evansville is a modern city. It has 2 banks, 5 churches, a seminary and 4 weekly papers. It is an important freight center, the shipments consisting of tobacco, dairy products, hides and grain.

FOOTVILLE.

Footville, Rock Co. Population, 450. Located 10 miles from Janesville and 9 miles from Evansville on the C. & N. W. Ry. There are no electric light nor gas plants. Has telephone connections. Western Union telegraph. American Express.

There are at present no factories in the city but industries will furnish reasonable inducement to secure their locations;



VIEW NEAR JANESVILLE.

about one hundred laborers could be secured from the surrounding country. Fruit and vegetables can be furnished for canning factory. The only raw materials within the near distance or near to the city are sand, clay and stone. The city has no banks nor drug stores; there are several general stores; there is 1 physician but no lawyer. There are 2 hotels and 1 boarding house.

The surrounding country is level and fertile.

JANESVILLE.

Janesville, Rock Co. Population, 13,770. 91 miles from Chicago and 40 miles from Madison. Located on the C. M. & St. P. and C. & N. W. Ry's., each of which companies have several branches radiating from the city. There is an interurban electric line connecting it with other cities. Has electric railway, waterworks, gas and electric light. Telephone connections. American and United States Express. Western Union and Postal telegraphs.

A large amount of land exceeding one hundred acres can be obtained along the railroads for manufacturing purposes. This city possesses exceptional shipping facilities over one or both lines and free sites can be obtained by substantial establishments. The Rock river at this point furnishes an excellent water power. Coal is obtained from Illinois and the East. Raw materials such as clay, peat and stone can be obtained in abundance. A large additional labor force can be obtained from the surrounding country.

Janesville is an important manufacturing city. In 1905 there were 73 manufacturing establishments with an aggregate capitalization of \$3,444,789, employing 1,348 persons and having an annual output of \$3,846,038. The manufacturing establishments comprise the following: talcstone mills, flour and feed mills, agricultural implement works, furniture factories, vehicle factories, boot and shoe companies, machine shops and factories for the manufacture of fountain pens.

Janesville is located in a very rich agricultural section of the state which has become the tobacco center of the North-west; for this reason, the city offers special advantages for the manufacture of cigars and tobacco. Other factories desired by this city are shoe factories, foundries and plants for the manufacture of agricultural implements.

The city is provided with an excellent educational system churches representing all religious denominations. Nearly all the secret and benevolent societies are fully represented. It is the location of the state institution for the blind. There are

in this city 15 physicians, 25 lawyers and over 40 teachers in the public schools. The industrial advantages of the city are advertised by the Janesville Advancement Association, which has enrolled in its membership leading business and professional men of the city.

MILTON.

Milton, Rock Co. Population, 810. 8 miles from Janesville and 63 miles from Milwaukee. C. M. & St. P. Ry., and C. & N. W. Ry., one mile west of the city at Milton Junction. There is no electric railway connection with any other city but a route for such a line is being surveyed. There is a water-works system, gas plant, telephone system, but no electric light plant. Western Union telegraph. United States Express.

There are no factories in the village at present.

The surrounding country is an excellent agricultural district. Fruit and vegetables are furnished in large quantities. There is an excellent bed of clay suitable for the manufacture of hard brick, located within one-half a mile from the city and a few hundred feet from the railroad. There are 3 physicians and 1 lawyer. The city has 2 hotels furnishing accommodations for 125 persons. No efforts have been made to make the city a summer resort but it has some advantages along this line, having excellent streets, many large shade trees and a fine park. Milton college is located in this city. Milton is located four miles from Lake Koshkonong, a large body of water in the southwestern part of Jefferson county.

MILTON JUNCTION.

Milton Junction, Rock Co. Population, 800. 8 miles from Janesville and 64 miles from Milwaukee. C. M. & St. P. Ry., and C. & N. W. Ry. No electric line at present but an interurban railway line is at present under consideration. There is a gas plant, water-works and telephone system, but no electric light plant. Western Union telegraph. American and United States Express.

Milton Junction as the name implies is located at the junction of Wisconsin's two leading railroads and offers excellent shipping facilities. There are no manufacturing establishments in the city at the present time. Owing to the large amount of fruit, vegetables and tobacco raised in the surrounding country, a canning factory and cigar factory would find this city a most convenient location. There are already 5 tobacco warehouses in this city. There are 3 physicians in this city but no lawyer. There are 3 hotels and several boarding houses.

SHOPIERE.

Shopiere, Rock Co. Population, 350. Situated 11 miles from Janesville, 5 miles from Clinton. Shipping facilities over the C. & N. W. Ry., which is located nearly one mile from the village. There is no electric light nor gas plant. Has telephone system. Western Union telegraph. American Express.

In this village there is a small water power. The surrounding country is a rich agricultural district and fruit and vegetables can be furnished for canning factories. Such raw materials as clay, sand and stone can be obtained in large quantities. There are no manufacturing establishments in the city at the present time. Additional labor can be secured from the surrounding country. There are 2 general stores, 2 hardwares, 2 blacksmith shops and 2 paint shops; there are no banks, drug stores nor laundries; there is 1 physician, but no lawyer; there are 2 boarding houses but no regular hotels. A considerable number of summer visitors are attracted to the village annually.

RUSK COUNTY.

Rusk County is located in the northwestern part of the state. It is intersected by the Chippewa river and its numerous branches heading to the northeast. The area is 916 square miles. The population in 1905 was 9,748. About one-fifth of the population is foreign born, Canadians and Germans being the most numerous. The total farm area in 1905 was 80,098, of which amount only 16,237 acres were improved land. The value of these farms including improvements was \$1,559,825. There was but very little farming in what is now this county prior to 1890. A vast amount of timber has been cut leaving large areas open to settlement. The total amount which has been occupied for agricultural purposes is less than 15% of the available land of the county. The western part of the county is rough and hilly as a result of ridges and glacial moraines, while the eastern part is modified mainly by stream erosion through which hills and valleys have been formed. It contains a few swamps, though entirely free from lakes. The soil is mainly a clayey loam varying to lighter loam. A variable amount of boulders is scattered throughout parts of the surface, though generally not to such an extent as to interfere permanently with cultivation. There are some large stretches where boulders are

entirely absent. The forest growth of this county is mainly birch, maple and hemlock with some white pine but most of the latter has been cut. In sections where farms have been cleared the soil shows itself capable of producing good crops of grain, grasses, corn, and potatoes. This soil is well adapted to the maintenance of an excellent dairy and live-stock industry. The principle products of the county are oats, corn and hay. The range of prices for cut-over lands which can be brought under cultivation is from \$8 to \$12 per acre. Improved farm land sells at from \$15 to \$25 per acre, according to location and state of improvement. The county seat is at Ladysmith. The following table shows the population of the cities, villages and towns in the county in 1905.

RUSK COUNTY.

TOWNS, CITIES AND VILLAGES.	Families.	AGGREGATE POPULATION.			COLOR.			Ex-soldiers and sailors.	Militia.
		Male.	Female.	Total.	White.	Colored.	Indians.		
Atlanta	166	568	427	995	995	.....	4	240
Big Bend	135	400	517	717	708	9	9	102	
Bruce, village	131	339	273	612	612	.....	3	160
Dewey	103	299	265	564	564	.....	2	119
Flambeau	59	141	134	275	275	.....	.....	6
Grant	79	290	173	463	433	.....	2	140
Grow	42	136	107	243	243	.....	1	42
Hawkins	57	165	122	287	287	.....	1	54
Ladysmith, city	365	947	773	1,720	1,719	1	16	350	
Lawrence	82	398	164	562	562	.....	1	235
Marshall	62	233	104	337	336	1	2	143	
Rusk	56	149	145	294	294	.....	8	34
Strickland	54	133	136	274	274	.....	1	30
Stubbs	215	541	455	995	935	.....	.....	204
Thornapple	78	265	167	432	432	.....	4	95
Tue	156	394	310	704	704	.....	5	153
Washington	54	145	129	274	252	.....	22	44
Total	1,894	5,517	4,201	9,748	9,715	10	23	64	2,205

APOLLONIA.

Apollonia, Rusk Co. Population 275. Not incorporated. Located on the M., St. P. & S. Ste. M. Ry. 10 miles west of Ladysmith, the county seat, 1 mile from Bruce, the nearest banking point, 95 miles from Rhinelander, 115 miles from St. Paul, and 128 miles from Superior. Western Express. Telegraph and telephone. Good shipping facilities and passenger service.

Has one general store, a hotel, graded public school employing 3 teachers, Catholic and Congregational churches, a physician,

blacksmith shop and saw mill. Woodworking shop would be best suited to the village. Wood is used for fuel obtained from the vicinity. Some help can be secured in the vicinity.

The village is located in a good farming country and about 50 per cent of the land suitable for crop raising is improved. The land is mostly level and a small per cent is swampy and sandy.

BRUCE.

Bruce, Rusk Co. Population 612. An incorporated village located on the M., St. P. & S. Ste. M. Ry. and on the Chippewa river, 8 miles west of Ladysmith, the county seat, 129 miles from Superior, 140 miles from Ashland, 66 miles from Chippewa Falls and 118 miles from St. Paul. Western Express. Telegraph and telephone. Good shipping facilities and passenger service.

Has a bank, drug store, 1 grocery, 1 hardware and 2 general stores, 4 hotels, 1 boarding house, graded public school employing 6 teachers, 2 physicians, 1 lawyer, 1 bakery, shoe shop, meat markets, barber shop, blacksmith shop, and a creamery. A weekly newspaper is published. A first class hotel is needed.

There are several water powers in the vicinity of the village which when developed will be a great advantage to this place as a manufacturing center. Wood in the immediate vicinity insures cheap fuel. Vegetables could be supplied for canning, and clay, sand, peat and timber are the natural products. A large number of men can be secured here to work the entire year.

The surrounding country is good for farming and is destined to become one of the best dairying and stock raising sections in northern Wisconsin. The soil is a rich black loam and is very productive. There are two logging railroads leading northward which as the country develops will become public carriers adding materially to the village in a commercial way. There is a good opening here for any kind of manufacturing establishments.

GLEN FLORA.

Glen Flora, Rusk Co. Population 200. An unincorporated village located on the M., St. P. & S. Ste. M. Ry. in the eastern part of the county. 11 miles from Ladysmith, the county seat and banking point, 84 miles from Chippewa Falls, 147 miles from Superior and 135 miles from St. Paul. Western Express. Telegraph and telephone connections. Good shipping facilities and passenger service.

The village has small shade trees, graded streets, drug store, 1 hardware and 2 general stores, 1 hotel, 2 boarding houses, graded public school employing 4 teachers, a physician, a

lawyer, 2 churches, opera hall, blacksmith shop and a saw and planing mill. A good hotel is needed.

There is an undeveloped water power that can be utilized for manufacturing purposes. Wood is used for fuel obtained from the adjacent country. The country is too thinly settled to furnish raw materials for canning. Clay, sand, timber and stone can be supplied. Some help can be secured here.

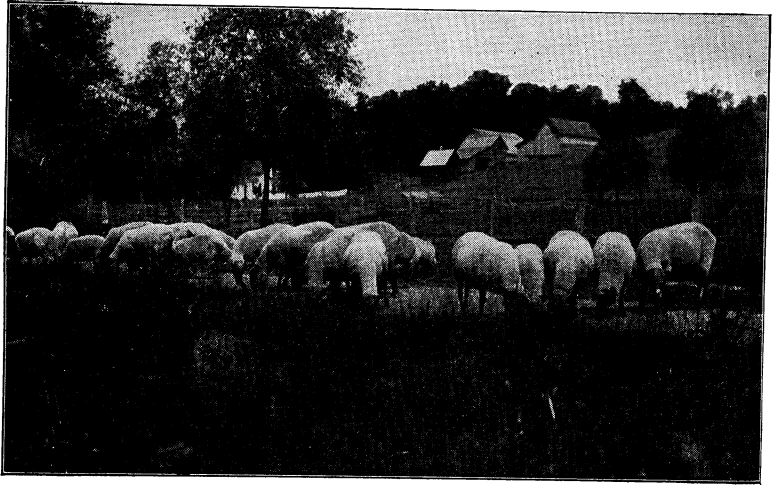
The surrounding country is all good for farming and only about 20 per cent of the land is improved. The unimproved lands are covered with forest of hemlock, birch, maple, elm and bass wood timber. This is a natural grazing country and dairying will be the chief industry. Any kind of manufacturing using timber products will do well here.

INGRAM.

Ingram, Rusk Co. Population 500. An unincorporated village located on the M., St. P. & S. Ste. M. Ry, in the eastern part of the county, 15 miles from Ladysmith, the county seat, 145 miles from St. Paul, 152 miles from Superior, and 89 miles from Chippewa Falls. Western Express. Telegraph and telephone facilities. Shipping facilities and passenger service good.

The village is lighted by electricity, has a drug store, 3 general stores, 1 hardware store, 3 hotels, 1 boarding house, graded public school employing 3 teachers, 1 Catholic and 1 Union church, harness shop, 2 meat markets, 1 blacksmith shop, furniture and carpenter shop and a large saw and planing mill employing from 250 to 400 men. The village needs a bank, a physician, creamery, hub and spoke factory and a first class hotel. There is a small, undeveloped water power. The village can be supplied with clay, sand and timber. Some help can be secured in the village and adjacent country.

The surrounding country is good for farming and especially adapted to dairying and stock raising. Immense crops of clover and timothy are grown. The land is gently rolling, the soil is rich and productive. There are large forests of hardwood timber, besides almost endless quantities of hemlock and spruce pulp wood, making this a fine location for char coal kilns and a pulp mill. Strong inducements are offered for a good class of settlers to locate and clear up the land.



A NORTHERN WISCONSIN SHEEP FARM.

LADYSMITH.

Ladysmith, Rusk Co. Population, 1,720. The judicial seat of Rusk county is located in the central part of the county on the M., St. P. & S. Ste. M. Ry. and on the Flambeau river, 136 miles from Minneapolis, 137 miles from Superior, 148 miles from Ashland, 74 from Chippewa Falls, and 325 from Milwaukee. Western Express. Telegraph and telephone facilities. Good shipping facilities and passenger service.

This city has grown from a small hamlet containing 108 people in 1900 to one of the most important cities in this section of the state. The Flambeau river affords abundance of water power. The city is supplied with an electric light and power plant, 2 banking houses, 2 drug stores, 3 grocery stores, 2 hardware and 3 general stores, a laundry, clothing store, furniture and undertaking store, a racket store, 4 hotels, 1 boarding house, high and graded public schools employing 13 teachers, 3 physicians, 1 dentist, 6 lawyers, Baptist, Christian, Congregational and Methodist churches, a stave and heading mill, 2 pulp and paper mills, a turning factory, saw mills and a full compliment of shops, etc. The high school, court house, jail and other public buildings are substantial structures. Two weekly newspapers are published. Foundries and machine shops are needed.

Water power and steam power are used. The nearby forests furnish cheap fuel. Clay, sand, peat, and hardwood timber are the natural products. Any amount of regular help can be se-

cured here. The fact that there are no idle factories or workshops speaks well for this city as a manufacturing point.

The results obtained from land already improved in the adjacent country show something of the future possibilities of this section as a farming country when the forests have been cleared away. The land is rolling, soil is rich and especially adapted to grasses, and only about 1 acre in 10 is improved. The country is fast developing as a dairy and stock raising section, and all kinds of crops suitable to the climate are raised in abundance.

TONY.

Tony, Rusk Co. Population 400. An unincorporated village located on the M., St. P. & S. Ste. M. Ry. 6 miles east of Ladysmith, the county seat and nearest banking point. Western Express. Telegraph and telephone. Good shipping facilities and passenger service.

Has an electric light plant, 2 general stores, a hotel, a graded school of four departments, Catholic and Methodist churches, an opera house, blacksmith shop, meat markets, wagon shop, saw mill, harness shop and a weekly newspaper.

There is an undeveloped water power. Wood is used for fuel obtained from the surrounding country. Clay, sand and timber are the natural products. This is a good location for a brick yard. Help can be secured in the vicinity.

This is a good farming country and only about 15 per cent of the land is improved. The soil is a clayey loam and the land is level and free from stone. There is an abundance of timber in this section.

WEYERHAUSER.

Weyerhauser, Rusk Co. Population, 300. An unincorporated village located on the M., St. P. & S. Ste. M. Ry., 15 miles west of Ladysmith, the county seat, 5 miles from Bruce, the nearest banking point, 124 miles from Superior, 135 from Ashland, 61 miles from Chippewa Falls and 113 miles from St. Paul. Western Express. Telegraph and telephone. Good shipping facilities and passenger service.

The village is located on a level tract of land with good drainage, has a drug store, 1 hardware and 4 general stores, a hotel, a boarding house, graded school employing 4 teachers, 1 physician, meat market, blacksmith shops and a weekly newspaper. A good hotel is needed.

Steam power is used. Wood is used for fuel, obtained from the surrounding country. Small fruits and all kinds of vegetables can be furnished for canning. The village can be supplied

with clay, sand, peat, timber and stone. A limited amount of help can be secured in the vicinity.

The adjacent country is suitable for farming and about 1-5 of the land is improved. Eighty per cent of the land is level and free from stone with about 5 per cent swampy. The village is in need of a creamery and brick yard.



A DAIRY HERD IN A WOOD'S PASTURE IN NORTHERN WISCONSIN.

ST. CROIX COUNTY.

St. Croix county is located in the north-western part of the state near the Minnesota border. The area is 711 square miles, with a population of 26,716 in 1905. Nearly one-fourth of the population is of foreign birth, consisting largely of Norwegians and Germans, but there are also many Canadians, Irish and Swedes. The total area of the county is about 372,000 acres, of which amount 252,000 acres are improved, about 50% of the area of the county. The value of the farms including the buildings is nearly \$12,000,000. The county is well drained by four large streams whose courses are marked by numerous rapids. The Apple river flows throught a rough and bluffy country. In the northwestern part of the county down to the Willow river, and the southwest-

ern corner, the soil is of al oamy nature and containing considerable sand but with a tenacious surface. The trees of this region are oak and popular. In the southern part a richer soil prevails, resembling the light nearly-clay soil of the oak openings of the land in south-eastern Wisconsin, and like it, is rich and productive. The same is true of the land in the north-central part bordering upon the prairie. The central portion of the county is an extensive prairie, which terminates to the east in the Rush river valley, and towards the north in that of Willow river. In the vicinity of New Richmond the prairie crosses the Willow river and stretches northward in detached areas to the county line. The soil is a light loam, which in general is not very deep, but there are some areas in which the soil is deeper, supporting a rich growth of grass; and also some lower tracts, containing small ponds encircled by marshy vegetation, or which when dry, leave a hay marsh. All this prairie soil is capable of yielding rich returns to the intelligent farmer. In the eastern part of the county the soil merges into a loamy clay which extends over a considerable portion of the western half of Dunn county. This region, which has supported an immense wealth of oak, maples, basswood and elms, and in the northern part some pine, possesses one of the richest soils in the northern part of the state and promises generous returns to the dairyman and stock grower. The acreage of the chief crops in 1890 and 1905 was as follows:

	Acreage in 1890.	Acreage in 1905.
Hay	53,156	42,576
Wheat	5,585	3,354
Corn	17,549	14,148
Oats	68,662	93,163
Barley	939	15,735
Rye	4,444	5,465
Flax Seed	2,000	5,708

There are 17 creameries in the county. The price of unimproved land ranges from \$12 to \$25 per acre, while improved land ranges in price from \$35 to \$60 per acre. Hudson is the county seat. The population of the cities, villages and towns for 1905 was as follows:

ST. CROIX COUNTY.

TOWNS, CITIES AND VILLAGES.	Families.	AGGREGATE POPULATION.			COLOR.			Ex-soldiers and sailors.	Militia.
		Male.	Female.	Total.	White.	Colored.	Indians.		
Baldwin	295	746	704	1,450	1,450			1	237
Baldwin, village	149	317	323	640	639	1		10	120
Cady	206	566	524	1,090	1,090			5	138
Ceylon	191	543	481	1,024	1,024			7	165
Eau Galle	201	526	501	1,027	1,027			4	159
Emerald	152	393	403	796	796			7	145
Erin Prairie	135	370	383	753	753			3	142
Forest	121	311	240	551	551			4	108
Glenwood	209	638	591	1,229	1,229			3	146
Glenwood, city:									
ward 1.....	63	145	145	290	290				
ward 2.....	52	117	136	253	253				
ward 3.....	95	173	189	362	362				
Total, city.....	905							9	144
Hammond	157	426	415	841	840		1		189
Hammond, village	102	218	227	445	445			14	77
Hudson	159	444	386	830	830			6	158
Hudson, city:									
ward 1.....	112	270	237	507	507				176
ward 2.....	274	631	701	1,332	1,332				271
ward 3.....	283	698	683	1,381	1,380	1			295
Total, city.....	3,220							30	
Kinnickinnic	122	342	301	643	643			2	142
New Richmond, city:									
ward 1.....	124	253	286	539	537	*2			
ward 2.....	169	334	410	744	744				
ward 3.....	100	308	233	541	541				
Total, city.....	1,824							23	343
Pleasant Valley	89	221	169	390	390			3	86
Richmond	130	372	342	714	714			10	155
†River Falls, city:									
ward 1.....	43	64	83	147	147			5	21
Rush River	128	309	273	582	582			7	111
St. Joseph	204	537	512	1,049	1,048		1	7	211
Somerset	250	792	700	1,492	1,492			7	262
Springfield	301	745	686	1,431	1,431			22	222
Stanton	137	413	339	752	752				171
Star Prairie	171	596	569	1,165	1,105			3	163
Star Prairie, village..	63	127	137	264	264			5	38
Troy	141	396	345	741	711			7	172
Warren	158	417	364	781	780		1	5	136
Total	5,286	13,758	12,958	26,716	26,709	4	3	209	4,826

*2 Chinamen.

†For total see Pierce Co.

BALDWIN.

Baldwin, St. Croix Co. Population, 640. 20 miles from Hudson, 27 miles from Menomonie and 51 miles from Minneapolis. C. St. P. M. & O Ry. There are no electric lines. Daily stages to New Centerville and Martell. Water-works, telephone system and electric light plant. Western Union telegraph. American Express.

Baldwin is a new town with all modern improvements. It is located in the richest part of St. Croix county. There are no factories located here at the present time. Coal and wood are used for fuel, the former being shipped from St. Paul. An increased labor supply can be secured from

the surrounding country. There is near the city a large deposit of clay which has been found by geological test to be most excellent for the manufacture of hard-brick. Tobacco of good quality is being raised near this town and considerable interest is being manifested in its cultivation. There is especially desired at this place a brick and tile works, a canning factory and tobacco warehouses. There are located here 1 bank, 2 drug stores, several grocery and drygoods stores, 1 weekly newspaper and 5 churches. There are 3 physicians, 3 lawyers and 5 teachers are employed in the public schools. The 2 hotels and 2 boarding houses now located at Baldwin, furnish ample accommodations.

DEER PARK.

Deer Park, St. Croix Co. Population, 300. 25 miles from Hudson, 12 miles from New Richmond and 45 miles from St. Paul. C. St. P. M. & O. R. R. Telephone system. Western Union telegraph. American Express.

Wood and coal are the principal fuels, wood being furnished in large quantities from the surrounding country. There are several promising deposits of clay near this place. There are many traces of iron but no extensive mining operations have been undertaken. There is 1 bank but no drug store. There are 2 churches. There is 1 physician but no lawyer. Nearly all the land surrounding Deer Park is under cultivation. Should a canning factory or pickling factory be located here, vegetables could be supplied in large quantities. This place is in need of a good hotel.

HAMMOND.

Hammond, St. Croix Co. Population, 445. 17 miles from Hudson and 200 miles from Milwaukee. C., St. P., M. & O. R. R. Western Union telegraph. American Express.

Hammond is an incorporated village. Wood and coal are used for fuel; wood is furnished by the surrounding country while coal is shipped from St. Paul. There are no factories in the village at the present time. The surrounding country is an excellent agricultural district. Fruit and vegetables are raised in large quantities. A canning factory would find this a good location. The surrounding country can be drawn upon for about 150 laborers. There is located at Hammond 1 bank, a drug store, the usual number of retail stores

and repair shops; 3 churches and 1 weekly paper. There is 1 small hotel. Hammond has 1 physician but no lawyer.

HUDSON.

Hudson, St. Croix Co. Population, 3,220. 19 miles from St. Paul, 250 miles from Madison and 331 miles from Milwaukee. C. St. P. M. & O. R. R. The waterworks system offers excellent water for household and manufacturing purposes. Telephone system, electric light plant. Western Union telegraph. American Express.

Hudson is the county seat of St. Croix county located on the St. Croix river where there is an extensive water power. Fruit and vegetables are furnished in large quantities from the surrounding country. Clay, sand and timber are the principal raw materials. There is one unoccupied factory building in this city which was formerly used as a box factory. Any kind of manufacturing plant will receive reasonable inducements to secure its location. There are now located here 3 banks, a large number of stores, saw mill, 2 breweries, a box factory, broom factory, a cold storage house and extensive railroad machine shops. There are 6 physicians, 6 lawyers, and 20 teachers employed in the public schools. There are also 8 churches, a Carnegie free library and 3 weekly newspapers.

Hudson is not at present a summer resort but the surrounding country offers many advantages for the advertising of this city to induce tourists and summer visitors to come here.

NEW RICHMOND.

New Richmond, St. Croix Co. Population, 1,824. 18 miles from Hudson and 35 miles from St. Paul. Wisconsin Central and C. St. P. M. & O. R. R. There is a good water-works system, telephone system and electric light plant. Western Union telegraph. American and National Express.

New Richmond is located on the Willow river at which point there is a considerable water power practically all of which is at present utilized. Sand, clay, peat and lumber are obtainable in abundance. There are many traces of iron in the surrounding country. Owing to the large quantities of vegetables, corn and berries raised annually, a canning factory would find this place a most convenient location. Increased help can be furnished from the surrounding neighborhood. There are now located here 2 banks, 3 drug stores, several general stores, a flour mill of 5 hundred barrels capacity, a sawmill with a cut of 20,000,000 ft. per year, a newspaper, cement factory and machine and repair shops. A wood-working and novelty plant which at one time did a prosperous business in this city has been closed and there

is now an excellent opportunity for the re-establishment of this business. Local business men are prepared to furnish some capital in order to have this plant reopened. There are 4 physicians, 3 lawyers and 17 teachers in this city. New Richmond is anxious to secure a first-class hotel and to any party who will erect such a hotel at a cost of approximately \$15,000, site worth about \$2,000 will be donated. New Richmond has many advantages as a summer resort being visited annually by a large number of summer visitors.

NORTH HUDSON.

N. Hudson, St. Croix Co. Population, 300. 1 mile from Hudson, the nearest banking point. Located on the C., St. P., M. & O. Ry. Western Union telegraph. American Express.

There is a good water power at this place. Wood for fuel purposes is furnished in abundance by the surrounding country. Coal is shipped from St. Paul and Minneapolis. The surrounding country can be drawn upon for a large increase in the labor supply. There are no unoccupied factories here at the present time. A shoe factory is especially desired here. The railroad repair shop of the Omaha line are located at this place.

SOMERSET.

Somerset, St. Croix Co. Population 400. 8 miles from New Richmond, the nearest banking point, 24 miles from St. Paul. Telephone system and electric light plant. Somerset is not located on a railway, being about two and a half miles from the Wisconsin Central line. Western Union telegraph. National Express.

There is a water power with from 500 to 700-horse power not yet utilized. Wood is the principal fuel which is supplied by the neighboring country. There are some extensive deposits of brick clay of a very fine quality near the village. Sand and stone also exist in large quantities. There are no factories here at the present time but a labor supply could easily be had from the surrounding country. A brick yard would be a suitable industry at this place. Somerset is also in need of a bank. It occupies a beautiful location on the Apple river with unsurpassed scenery. Launches can navigate the river for a distance of over two miles. This city is within eighteen miles of the terminus of the twin city electric lines. A small hotel at this point would meet the requirements of the growing summer resort business.

WILSON.

Wilson, St. Croix Co. Population 300. 30 miles from Hudson, 12 miles from Baldwin, 15 miles from Menomonie and 51 miles from St. Paul. Baldwin and Menomonie are the nearest banking points. C., St. P., M. & O. Ry. Western Union telegraph. Telephone connection. American Express.

Wilson is situated in one of the finest dairy districts in the State of Wisconsin. Special efforts are being made to secure the extension of this industry. Wood is the principal fuel used which is obtained from the surrounding country. There is no bank at this place. Two general stores supply the village with its commodities. There are no factories here at the present time, since the timber has been cut. There is 1 physician but no lawyer. The raw materials of this district are confined largely to clay and stone. Iron has been found in considerable quantities but no extensive mining operations have as yet been undertaken. The people of Wilson and surrounding country are desirous of securing the location of a bank. There is only 1 hotel which is inadequate for the village and a larger hotel is needed. Wilson is not at present a summer resort but has many advantages in that direction. A lake is situated within a quarter of a mile from the village.

WOODVILLE.

Woodville, St. Croix Co. Population 400. 22 miles from Hudson. C., St. P. M. & O. Ry. No electric railway connections. Telephone system. Western Union telegraph. American Express.

Wood is the principal fuel which is furnished by the surrounding country. Nearly all the land surrounding this place is now under cultivation, and vegetables are being raised in large quantities. Such raw materials as clay, sand, stone and timber exist in abundance. There is 1 bank, 1 drug store and several general stores. There are also 3 churches located here. There is 1 physician but no lawyer. There is 1 unoccupied factory building in this city which was at one time used as a heading mill. A canning factory or cheese factory would find this an excellent location owing to the large quantities of vegetables raised and the tendency toward developing the dairy industry.

SAUK COUNTY.

Sauk county is situated in the southwestern part of the state on the Wisconsin river. It has an area of 820 square miles. The population in 1905 was 32,825, of which number 5,589 were foreign born, Germans representing over 70% of the total. Being an old county, practically all of the land available for farming is now under cultivation. The total farm area in 1905 was 459,860 acres, of which 244,535 acres were improved land. The improved farm area of the county was increased nearly 20,000 acres during the last fifteen years. However, a large increase has occurred in the valuation of agricultural lands including improvements, the valuation in 1905 being \$17,993,926 as against only \$9,431,531 in 1890. Numerous bluffs and the terminal moraine in the eastern part of the county, combined with the stream erosion in the western driftless portion, makes the surface of the county as a whole very hilly. The eastern portion is covered with a heavy mantle of drift, consisting of boulder clay, sand and gravel. An excellent drainage system is afforded by the Wisconsin and Baraboo rivers and their tributaries. The soils along the Wisconsin river and north of the Baraboo river are a fertile sandy loam. South of the Baraboo river the soils are mainly a light clayey loam emerging into the medium and heavier clayey loams in the western part. This western area ranks favorably with the wealthiest agricultural soils in the state. Away from the principal rivers there is marshy soil. The chief crops and the acreage of each in 1890 and 1905 were as follows:

	Acreage in 1890.	Acreage in 1905.
Oats	44,198	56,758
Barley	1,434	4,310
Rye	10,695	10,692
Corn	38,064	44,777
Hay	46,058	51,266
Potatoes	4,032	9,000

During the present year a considerable acreage has been devoted for the first time to the raising of sugar beets. The dairy interest in recent years has grown to considerable proportions and is now represented by 14 cheese factories, 22 creameries and

7 skimming stations. Practically no good unimproved land remains except in small tracts owned in connection with improved land. Such lands average about \$35.00 per acre. Improved farm land ranges from \$40 to \$110 per acre according to location and quality. Baraboo is the county seat. The following table shows the population statistics of the cities, villages and towns in the county in 1905:

SAUK COUNTY.

TOWNS, CITIES AND VILLAGES.	Families.	AGGREGATE POPULATION.			COLOR.			Ex soldiers and sailors.	Militia.
		Male.	Female.	Total.	White.	Colored.	Indians.		
Baraboo	321	717	657	1,374	1,374	.....	.....	19	253
Baraboo, city:									
ward 1.....	568	964	1,109	2,073	2,045	28	.....	50	375
ward 2.....	586	1,105	1,189	2,294	2,230	4	.....	53	589
ward 3.....	348	709	759	1,468	1,468	.....	.....	21	309
Total, city...5,835									
Bear Creek	175	469	467	936	936	.....	.....	7	167
Dellona	119	339	301	640	640	.....	.....	6	124
Delton	217	480	421	901	901	.....	.....	19	146
Excelsior	190	489	437	926	926	.....	.....	5	192
Ableman, village	101	244	217	461	461	.....	.....	1	96
Fairfield	155	354	318	672	672	.....	.....	13	111
Franklin	221	664	549	1,213	1,213	.....	.....	4	201
Freedom	194	604	466	1,070	1,070	.....	.....	4	244
North Freedom, vil....	162	290	288	578	578	.....	.....	15	111
Greenfield	178	430	419	849	849	.....	.....	9	136
Honey Creek	194	500	431	931	931	.....	.....	5	208
Ironton	292	658	612	1,270	1,270	.....	.....	25	219
La Valle	213	572	475	1,047	1,047	.....	.....	7	189
La Valle, village.....	108	172	187	359	359	.....	.....	10	61
Merrimack	123	292	247	539	539	.....	.....	4	91
Merrimack, village	82	168	165	333	333	.....	.....	11	67
Prairie du Sac	113	261	239	500	500	.....	.....	2	86
Prairie du Sac, village.	202	319	352	671	671	.....	.....	10	101
Sauk City, village.....	273	347	401	748	748	.....	.....	10	113
Reedsburg	225	655	526	1,181	1,181	.....	.....	9	192
Reedsburg, city:									
ward 1.....	350	581	588	1,169	1,169	.....	.....	4	246
ward 2.....	345	646	710	1,346	1,346	.....	.....	25	180
Total, city, 2,515									
Spring Green	120	305	276	581	581	.....	.....	7	110
Spring Green, village..	186	361	409	770	770	.....	.....	13	131
Sumpter	139	364	302	666	666	.....	.....	7	138
Troy	183	487	427	914	914	.....	.....	9	202
Washington	237	646	555	1,201	1,201	.....	.....	13	226
Westfield	265	698	592	1,290	1,290	.....	.....	8	232
Winfield	165	428	326	754	754	.....	.....	8	171
Woodland	229	590	510	1,100	1,100	.....	.....	16	215
Total	7,589	16,908	15,917	32,825	32,793	32	.....	414	6,212



DEVIL'S LAKE—THE NOSE.

ALBEMANS.

Ablemans, Sauk Co., is an incorporated village of 461 inhabitants; is located on the C. & N. W. Ry., 176 miles from Chicago, 129 miles from Milwaukee and 43 miles from Madison. First class facilities for receipt and shipment of freight. Eight passenger trains daily. Telegraph and telephone. American Express.

There is a small undeveloped water power about a mile from the village. Such raw materials as fruit, vegetables, clay and sand stone can be supplied. A brick yard or pickle factory is best suited for the place. Plenty of help can be secured. The village has no bank, drug store or electric light plant but is supplied with 3 groceries, a hardware, 3 general stores, harness shop, 2 blacksmith and wagon shops, a furniture store, meat market, hotel, several boarding houses, 1 physician, a graded school, 2 large stone quarries, lumber yards, coal yards, feed mills, etc.

Nearly all the land in this locality, suitable for farming, is improved. The soil is a sandy loam.

BARABOO.

Baraboo, Sauk Co., is a city of 5,835 population, is located on the C. & N. W. Ry., 167 miles from Chicago, 119 miles from Milwaukee and 37 miles from Madison. Excellent freight and passenger facilities. Telegraph and telephone. American Express.

This city is the end of a freight division of the C. & N. W. railroad. Such raw materials as clay, sand, stone, peat, iron,

fruit and vegetables could be supplied and plenty of help procured. A cold storage plant could be supported here. A sanitarium is desired. The city is supplied with a gas plant, an electric light plant, 2 banks, 5 drug stores, 12 groceries, 4 hardwares, 3 general stores, 4 department stores, 3 laundries, 4 shoe stores, 4 jewelry stores, 2 breweries, 4 bakeries, 5 barber shops, 1 book store, 3 newspapers, 3 clothing stores, 2 harness shops, 5 livery stables, 2 furniture stores, 1 fur store, 1 woolen mill, 1 linen mill, a nursery, railroad shops, a florist, china store, 13 churches, 5 hotels, 6 boarding houses, 7 physicians, 11 lawyers, a public school employing 40 teachers, a public library, park, fine streets, shade trees, etc. There is a good opening here for a foundry for some energetic person understanding the business.

Some of the land in this locality is rough, stony and sandy but all is fertile and excellent for general farming purposes.

IRONTON.

Ironton, Sauk Co., is an unincorporated village of about 200 population; is located $2\frac{1}{2}$ miles from La Valle, the nearest railroad station. Telephone.

A canning factory or brick yard is best suited for this place. Inducements would be offered to secure some such industry. Vegetables, clay, sand, timber and stone can be supplied. The village has a drug store, 4 groceries, 1 hardware, 2 general stores, a harness shop, a shoe shop, 2 blacksmith and repair shops, a hotel, 1 physician, 2 churches, a park, and plenty of shade trees.

Some of the best farming lands in the state are in this locality. About $\frac{1}{2}$ the land, suitable for farming purposes is as yet unimproved.

LA VALLE.

La Valle, Sauk Co., is an incorporated village. Population 359. Is located on the C. & N. W. Ry., 190 miles from Chicago, 143 miles from Milwaukee and 60 miles from Madison. Telegraph and telephone. Good freight and passenger facilities. American Express.

Wood for fuel is procured from the farmers near by. Such raw materials as fruit, vegetables, timber, stone, clay and sand can be supplied. Seventy-five laborers can be secured. The village is supplied with a bank, drug store, 4 groceries, 2

general stores, a hardware, grist mill, a physician, graded school and 2 hotels.

Most of the land here suitable for farming is improved. Some of the land is sandy, some swampy, and about one-fourth is rough.

LIME RIDGE.

Lime Ridge, Sauk Co., is a small unincorporated village of about 200 people. Located 9 miles from La Valle the nearest railroad station. Telephone.

A railroad is being graded toward this place from La Valle. Such raw materials as clay, sand, stone, timber, fruit and vegetables can be supplied. The village is supplied with a general store, grocery, hardware, 2 blacksmith shops, a barber shop, feed and planing mill, lumber yard, 1 physician, and a hotel.

The soil in this locality is excellent, stock raising is the leading occupation of the farmers. Tobacco cultivation is also coming to the front.

LOGANVILLE.

Loganville, Sauk Co., is an unincorporated village. Population about 300; is located 8 miles from Ablemans, the nearest railroad station. Telephone.

Inducements would be offered for small factory; fruit, vegetables, clay, sand, stone and timber can be supplied. A canning factory or brick yard is best suited for the place. Help can be secured. The village has 2 dry goods stores, a hardware, groceries, 3 hotels, a physician, meat market, barber shop, farm machinery dealers, undertaker, blacksmith and wagon shop. A railroad is being built in the direction of this village.

Some of the best farming lands in the state are in this locality. Some of it is rough but all suitable for general farming. The soil is a clayey loam.

MERRIMAC.

Merrimac, Sauk Co., is an incorporated village. Population, 333; located on the C. & N. W. Ry., 156 miles from Chicago, 108 miles from Milwaukee, and 26 miles from Madison. Excellent freight and passenger facilities. Telephone and telegraph. American Express.

Coal is shipped from Chicago and Milwaukee, wood is produced in this locality. Fruit, vegetables, white brick clay, sand, stone, and timber can be supplied. A canning factory, wagon shop or brick yard is best suited for the place. The village is

already supplied with 2 groceries, 3 general stores, a hardware, 2 blacksmith shops, a creamery, hotel, 2 boarding houses, a graded school and 2 physicians.

This village is on the banks of the Wisconsin river, and some of the land is very sandy. But the soil away from the river is a very fertile, sandy loam.

NORTH FREEDOM.

North Freedom, Sauk Co., is an incorporated village of 578 inhabitants; is located on the C. & N. W. Ry., 173 miles from Chicago, 126 miles from Milwaukee and 43 miles from Madison. Good freight and passenger facilities. Telegraph and telephone. American Express.

Wood for fuel is procured in the locality and coal is shipped from Milwaukee and Chicago. Such raw materials as fruit, vegetables, clay, iron, sand, stone, timber and mineral paint can be supplied. A paint factory, brick yard, farm tool factory, wooden ware establishment or a canning factory is best suited for this place. Any amount of labor can be secured in the village and the surrounding country. This place is already supplied with a bank, drug store, 3 groceries, 2 hardwares, 2 dry goods stores, a restaurant, furniture store, clothing store, millinery, wall paper and paint shop, confectionery, meat market, farm implement establishment, 3 hotels, 2 boarding houses, 3 physicians, a public school employing 4 teachers, fine dwellings, streets, shade trees, churches, stone quarries, and a newspaper.

There is some sandy land in this locality and a very little low land but most of it is level, free from stone and is excellent for general farming purposes.

PRAIRIE DU SAC.

Prairie du Sac, Sauk Co., is an incorporated village. Population, 671; is located on the C. M. & St. P. Ry., 164 miles from Chicago, 155 miles from Milwaukee and 33 miles from Madison. Telephone and telegraph. Fairly good freight and passenger accommodations, U. S. Express.

This place would offer a free site and other inducements for a canning factory, cement block factory or a wood working establishment. Help can be procured. Such raw materials as fruit, vegetables, clay, sand, stone, peat and timber can be supplied. The village is supplied with a bank, drug store, 4 groceries, 5 hardwares, 4 general stores, 2 jewelry stores, 3 blacksmith shops, 2 farm implement dealers, a meat market, feed mill, millinery establishment, candy and fruit store, 3 physicians, 2 lawyers, a high school, 2 hotels and boarding houses.

Most of the land suitable for farming purposes is improved.



FARM SCENE NEAR PRAIRIE DU SAC.

REEDSBURG.

Reedsburg, Sauk Co., is a city of 2,515 population; is located on the C. & N. W. Ry., 190 miles from Chicago, 143 miles from Milwaukee, and 60 miles from Madison. Excellent freight and passenger facilities. Telephone and telegraph. American Express.

The city is supplied with 3 banks, 2 drug stores, 4 groceries, 3 hardwares, 1 department store, 3 general stores, a laundry, 2 harness shops, jewelry stores, woolen mills, furniture factory, planing and feed mill, brewery, canning factory, creamery, flour mill, wagon and blacksmith shops, newspapers, machine shops, sash and door factory, hotels and boarding houses, 6 physicians, 7 lawyers, a public school employing 16 teachers, an armory, opera house, 6 churches, good sewage system, etc.

About three-fourths of the land, suitable for farming, is improved. About one-fourth of the land has a sandy soil and one-eighth is rough.

*SPRING GREEN.

Spring Green, Sauk Co., is an incorporated village. Population, 770. Located on the C. M. & St. P. Ry., 168 miles from Chicago, 119 miles from Milwaukee and 37 miles from Madison. Telephone and telegraph. Fairly good freight and passenger accommodations. United States Express.

Such raw materials as fruit, vegetables, clay, sand, peat, stone and timber can be supplied. A canning factory is best suited for the place. About eighty laborers can be procured. The village is supplied with an electric light plant, a bank, 2 groceries, 2 drug stores, 2 hardwares, 5 general stores, 2 barber shops, farm implement dealers, paraffine factory, blacksmith and wagon shops, 2 shoe stores, a photograph gallery, jewelry store, newspaper, harness shops, livery stables, 3 churches, 2 dentists, 3 physicians, 1 lawyer, cigar factory, 2 hotles, cement walks, shade trees, opera house, library, etc.

About one-half the soil here is very sandy, the remainder is a sandy loam and excellent for farming purposes.

SAWYER COUNTY.

Sawyer county is located in the north central part of the state. This is one of the largest counties in the state, having an area of 1,342 square miles. The population in 1905 was only 5,044, a gain of 1,451 over the census of 1900. One-fifth of the population is of foreign birth, consisting mainly



A FIELD OF OATS IN A NEW CLEARING, NORTHERN WISCONSIN.
50—L

of Norwegians, Canadians and Swedes. It is only within recent years that any attempt has been made to carry on the business of agriculture. Out of a total area of 858,880 acres, the present farm area is but 22,932 acres, or less than 3% of the county. There were only 11 farms in the entire county in 1890. The topography of the western and northwestern parts is rolling and hilly, being characteristic of morainal deposits. The eastern and southern sections of the county have a much less rugged surface. Lakes and streams are abundant throughout the county furnishing an excellent drainage. The soils are largely light clayey loams. This soil is generally more stony than the other soils of the northern part of the state. Over large portions however, where the lands are sloping, boulders are almost entirely absent. In most cases the amount of stones is not enough to interfere permanently with cultivation. The forest growth of this soil was originally very dense, consisting principally of birch, basswood, hemlock and white pine. The pine has been nearly all cleared away, but much hardwood still remains. This soil is in general coarser and more porous than the loamy clays of the northern counties but is better suited to corn and potatoes. It can also maintain an excellent dairy industry. By a clover rotation with small grains and other crops and by a wise selection of farm crops in connection with a dairy and stock industry, a steady income to the community is assured. Areas of sand of considerable extent occur in the western and northwestern parts. Irregular areas of humus soil, composed mainly of muck and peat, are found in different sections of the county. The principal products of the county during 1905 were wheat, oats and hay. There is one cheese factory in the county. The price of unimproved cut over land ranges from \$5. to \$10. per acre. The price for improved farm land ranges from \$20 to \$40 per acre. Hayward is the county seat. The population of the local political divisions in 1905 was as follows:

SAWYER COUNTY.

TOWNS, CITIES AND VILLAGES.	Families.	AGGREGATE POPULATION.			COLOR.			Ex-soldiers and sailors.	Militia.
		Male.	Female.	Total.	White.	Colored.	Indians.		
Hayward	496	1,603	1,297	2,900	2,825	*1	74	17	604
Radisson	121	410	264	674	671	....	3	4	104
Reserve	174	564	453	1,017	93	....	924	5	281
Sand Lake	72	179	144	323	282	....	41	2	78
Winter	22	77	53	130	130	....	....	....	34
Total	885	2,833	2,211	5,044	4,001	1	1042	28	1,101

*1 Chinaman.

HAYWARD.

Hayward, Sawyer Co., is an unincorporated city of about 2,000 inhabitants; is located on the S. and E. and the C. St. P. M. & O. railroads, 108 miles from Eau Claire, 75 miles from Bayfield and 125 miles from St. Paul. Four passenger trains daily. Good facilities for receipt and shipment of freight. Telegraph and telephone. American Express.

A good opportunity is offered here for a brick yard or wood working establishment of any kind. Surh raw materials as clay, sand, stone, vegetables and timber can be supplied. Plenty of help can be engaged. A magnificent water power can be developed here. An abundance of wood for fuel can be procured in the immediate locality. Hayward is already supplied with an electric light plant, 2 banks, 2 drug stores, 6 groceries, 3 hardwares, 6 general stores, a laundry, match factory, newspaper, lumber manufacturing company, flouring mills, hotels, a public school system employing 22 teachers, 3 attorneys at law, 3 physicians, paved streets, brick walks, shade trees, parks and an artificial lake. It is somewhat of a summer resort.

The soil in this locality is very productive. Only about one tenth of the land suitable for farming is as yet improved.

SHAWANO COUNTY.

Shawano county is situated in the northeastern part of the state. The area is 1,135 square miles. The population in 1905 was 31,037, a gain of 3,562 over the census of 1900. There are in the county 6,850 persons of foreign birth, of whom 4,386 are Germans. Poles are second in number. The total area occupied by farms in 1905 was 353,541 acres, of

which only 83,172 acres were improved. The value of these farms in 1905, including improvements, was \$10,501,586, as compared with \$3,706,060, showing a gain of \$6,795,526 or over 187% in 15 years. This county still possesses large unsettled tracts, offering excellent opportunities to the homeseeker. The present farm acreage is but 48% of the area of the county. The surface of the county is more or less rolling and is covered with a veritable thickness of glacial drift forming hills and ridges. Throughout nearly the entire county the soil is a clayey loam of the lighter varieties. It is a comparatively heavy soil to work, has a large capacity for holding water, and will not leach as badly as prairie loam or sandy soils. There are parts of the county where the soil is very stony. In all parts of the county where farms have been cleared on this soil, it has yielded good crops of grain, grasses and corn. It is, however, too coarse grained to produce the strongest grass or wheat, but will maintain a profitable dairy and stock industry. While not so good a potato soil as the sandy loam, it nevertheless gives good returns in this line of farming. In the eastern part of the county along the Wolf river occur considerable areas of sandy loams. Irregular areas of humus soils are found along many of the stream channels. The chief products of the county and the acreage devoted to each in 1890 and 1905 were as follows:

	Acreage in 1890.	Acreage in 1905.
Wheat	12,777	8,921
Oats	15,056	32,754
Barley	746	7,199
Rye	2,497	4,439
Corn	3,488	6,324
Hay	20,795	36,297
Potatoes	1,613	4,446

That the dairy possibilities of this county are being realized is shown by the great strides in this industry. In 1905 there were 52 cheese factories, 9 creameries and 2 skimming stations in the county. There is still considerable hardwood, but the pine has nearly all been cut. The price of cut over and unimproved lands which can be made tillable ranges from \$5 to \$30 per acre. Improved land ranges in price from \$30 to as high as \$100 per acre. A considerable portion of the

northern part of the county is occupied by the Menomonie Indian Reservation. Shawano is the county seat. The population of the cities, villages and towns in 1905 was as follows:

SHAWANO COUNTY.

TOWNS, CITIES AND VILLAGES.	Families.	AGGREGATE POPULATION.			COLOR.				Militia.
		Male.	Female.	Total.	White.	Colored.	Indians.	Ex-soldiers and sailors.	
Almon	123	350	310	660	660	.....	.....	4	118
Angelica	234	739	659	1,398	1,398	.....	.....	2	212
Aniwa	128	388	302	690	600	.....	.....	3	123
Aniwa, village	76	193	160	353	353	.....	.....	2	90
Belle Plaine	188	575	572	1,147	1,147	.....	.....	14	2 7
Biramwood	145	369	391	760	739	.....	21	3	107
Biramwood, village...	148	329	372	701	701	.....	.....	14	140
Eland, village	82	187	152	339	339	.....	.....	2	78
Fairbanks	180	578	452	1,030	1,030	.....	.....	4	202
Tigerton, village	140	389	345	734	734	.....	.....	3	185
Germania	67	207	177	384	383	1	.....	1	66
Grant	225	604	576	1,180	1,180	.....	.....	1	156
Green Valley	212	633	496	1,129	1,129	.....	.....	3	211
Hartland	274	765	701	1,466	1,466	.....	.....	4	292
Herman	224	662	601	1,263	1,233	.....	30	5	207
Stockbridge Ind. Res..	74	228	203	431	1	.....	430	8	81
Hutchins	119	326	281	607	604	3	.....	6	91
Mattoon, village	169	559	396	955	935	.....	.....	4	254
Lessor	227	715	587	1,302	1,302	.....	.....	7	196
Maple Grove	284	921	845	1,766	1,766	.....	.....	2	226
Menominee Ind. Res....	402	798	663	1,461	119	.....	1342	30	.....
Morris	155	418	326	744	744	.....	.....	1	181
Navarino	88	254	204	458	453	.....	.....	2	74
Pella	177	531	462	993	983	5	.....	.....	186
Richmond	165	473	427	900	900	.....	.....	.....	154
Shawano, city:									
ward 1.....	219	478	508	986	981	.....	5	11	195
ward 2.....	139	343	285	628	617	3	8	.....	146
ward 3.....	190	408	424	832	820	.....	12	13	155
Total, city, 2,446									
Seneca	108	310	275	585	585	.....	.....	1	102
Washington	210	637	504	1,141	1,141	.....	.....	2	222
Cecil, village	73	160	166	326	326	.....	.....	3	67
Waukechon	183	557	476	1,033	1,033	.....	.....	.....	154
Wescott	79	225	209	434	428	6	.....	1	68
Wittenberg	245	668	564	1,232	1,033	.....	199	2	202
Wittenberg, village....	186	505	504	1,009	897	2	110	6	209
Total	5,931	16,462	14,575	31,037	28,860	20	2157	166	5,307

ANIWA.

Aniwa, Shawano Co., is an incorporated village. Population 353. Located on the C. & N. W. Ry., 197 miles from Milwaukee, 119 miles from Manitowoc, and 82 miles from Marshfield. Four passenger trains daily. Facilities for receipt and shipment of freight good. Telegraph and telephone. American Express.

Wood for fuel is plentiful in this locality. Such raw materials as vegetables, sand, brick, clay and abundance of timber can be supplied and help secured. Any woodworking factory

is best suited for the place. The village is supplied with 3 groceries, 2 hardwares, 3 general stores, a shingle and lath mill, 2 saw mills, a meat market, 3 hotels, a boarding house, a creamery, 1 physician, public hall, etc. There is a vacant factory building here that can be obtained at a reasonable price.

About one half of the land in this locality suitable for farming purposes is improved. The soil is a clayey loam, comparatively free from stone, sand and swamps.

BIRNAMWOOD.

Birnamwood, Shawano Co., is an incorporated village. Population 701. Located on the C. & N. W. Ry., 276 miles from Chicago, 191 miles from Milwaukee, and 68 miles from Marshfield. Good freight and passenger facilities. Telephone and telegraph. American express.

There is plenty of wood for fuel in this locality. Such raw materials as clay, sand, stone, timber and vegetables can be supplied, and help secured. Any kind of woodworking industry is best suited for the place. This village is supplied with 3 general stores, a bank, drug store, hardwares, a saw and shingle mill, brick yard, 3 physicians, a lawyer, a public school employing 10 teachers, and hotels and a newspaper.

About 25 per cent of the land in this locality suitable for farming purposes is improved. In this section of the state there is some stony, some marshy, some rough and a little sandy land. But the soil is well adapted to general farming purposes.

BONDUEL.

Bonduel, Shawano Co., is an unincorporated village of about 350 inhabitants. Located on the C. & N. W. Ry. Fairly good freight and passenger facilities. Telephone and telegraph. American Express.

Such raw materials as vegetables, clay, sand, and granite can be supplied and plenty of help engaged. A brick yard is best suited for the place. A good supply of water is to be had. The village is supplied with a bank, 3 general stores, 2 hardwares, a physician, lawyer, graded school, 2 hotels and a boarding house.

The land here is rolling, but all tillable and the soil is first class.

CECIL.

Cecil, Shawano Co., is an incorporated village. Population 326. Located on the C. & N. W. Ry., 8 miles from Shawano, 54 miles from Oconto, 179 miles from Milwaukee and 264 miles from Chicago. Four passenger trains daily. Fairly good facilities for receipt and shipment of freight. Telegraph and telephone. American express.

About one hundred and fifty laborers can be secured for factory work. Such raw materials as clay, sand, and timber can be supplied. This is a good location for another dry goods store. The village is supplied with a bank, a grocery, 2 hardwares, 1 dry goods store, a hotel, meat market, restaurant, 3 blacksmith shops, a saw mill, tailor shop, harness shop, a bicycle shop, church, a physician, 2 boarding houses, a graded school and public buildings. This place is a summer resort town, being located on a chain of very beautiful lakes.

The soil in this vicinity is fertile, level and free from stone.

ELAND.

Eland, Shawano Co., is an incorporated village of 339 inhabitants. Located on the C. & N. W. Ry., 187 miles from Milwaukee, 109 miles from Manitowoc, and 72 miles from Marshfield. Facilities for receipt and shipment of freight good. Twelve passenger trains daily. Telegraph and telephone. American Express.

An almost unlimited supply of wood for fuel can be obtained in this locality. Vegetables, clay for brick, building stone and timber can be supplied. Some wood working industry, a flouring mill or general store is best suited for the place. This village is already supplied with a drug store, 2 general stores, 2 blacksmith shops, 3 hotels, 1 physician, a graded school, and a public park. A first class hotel is desired.

The soil in this locality is a clayey loam and well suited for farming. About one tenth the land is improved. Some of this land is hilly, some stony, and some marshy.

SHAWANO.

Shawano, county seat of Shawano county, is a city of 2,446 inhabitants. Located on the C. & N. W. Ry. 171 miles from Milwaukee, 104 miles from Marshfield, and 70 miles from Wausau. Good shipping facilities. Four passenger trains daily. Telephone and telegraph. American Express.

This is a summer resort town located near Shawano lake which is six miles long and three miles wide, and well supplied with fresh water fish. A splendid 800 horse water power can be developed here. Vegetables, clay, sand, stone and timber can be supplied. Help could be secured for any factory the town would support. A woodenware factory, cold storage, lime

kiln, and boat factory are best suited for the place. An idle factory building can be purchased here at a very reasonable price. Shawano is supplied with 2 banks, 3 drug stores, 7 groceries, 3 hardwares, 6 general stores, a laundry, 3 bakeries, 3 meat markets, news stand, 2 livery stables, 3 blacksmith shops, 3 newspapers, churches, business college, brewery, pulp mill, paper and sulphite mill, a grist mill, 3 elevators, saw mill, 2 hotels, five boarding houses, 5 physicians, 12 lawyers, a high school employing 12 teachers, a public park, shade trees, good streets and walks.

All the land surrounding this place is suitable for farming, and but little more than one third of it is as yet improved. Some of the land is stony, some marshy, and a small portion is sandy.

TIGERTON.

Tigerton, Shawano Co., is an incorporated village. Population 734. Located on the C. & N. W. Ry., 175 miles from Milwaukee, 260 miles from Chicago, and 75 miles from Marshfield. Has good freight and passenger accommodations. Telegraph and telephone. American Express.

There is an undeveloped water power here. Plenty of wood for fuel can be had in this locality. This vicinity can supply vegetables, and an abundance of timber. Any kind of woodworking industry is best suited for the place. Three hundred laborers can be engaged. It is also supplied with a bank, a drug store, 3 general stores, 2 hardwares, a barber shop, wagon shops, a jewelry store, a cigar factory, millinery shop, livery, creamery, harness shop, newspaper, 2 physicians, 2 lawyers, a graded school, hotels and boarding houses. A first class hotel is desired.

But little of the land suitable for farming is improved. The soil is a heavy loam. Dairying is fast becoming a leading industry among the farmers.

WITTENBERG.

Wittenberg, Shawano Co., is an incorporated village having a population of 1,009. Located on the C. & N. W. Ry., 1.3 miles from Milwaukee, 105 miles from Manitowoc and 68 miles from Marshfield. Good freight and passenger facilities. Telephone and telegraph. American express.

Any kind of woodworking establishment is best suited for the town. The village can be furnished with such raw materials as vegetables and timber. About 80 laborers can be procured. The village is supplied with an electric light plant, a bank, drug store, 3 groceries, 3 general stores, 2 hardwares, 2 shoe stores, 2 harness shops, 2 barber shops, 3 blacksmith shops, 3 saw mills, 4 physicians, 1 attorney at law, a public school system employing 7

teachers, a Lutheran Academy, a government Indian school, 3 hotels, a boarding house and a newspaper.

The surrounding country is well supplied with trout streams. It is well adapted for general farming and only about three fifths of the land suitable for this purpose is improved. There is but little stony or swampy land here.

SHEBOYGAN COUNTY.

Sheboygan county is located in the east central part of the state on Lake Michigan. It has an area of 510 square miles. The population in 1905 was 52,070, a gain of 1,725 over 1900. Approximately one-fourth of the population is of foreign birth. Of this number, Germans are largely in the majority, Sheboygan county ranking second in the proportion of its German population. Being an old county, all the land adapted to cultivation has been occupied many years. The total value of the farms including improvements in 1905 was \$19,468,024, a substantial increase over the valuation in 1890. The topography of the county is broken and hilly in the western and northwestern portions. The area adjacent to the lake has a less broken surface, being a part of the former extension of the lake bed. The county possesses most excellent soils, well adapted to all forms of agricultural interests. The soils covering the western half of the county are light and heavy clayey loams of great fertility. The soil of this district is not surpassed in the state. The eastern half of the county is a very heavy clayey loam derived from the red lacustrine clays. A small strip adjacent to the lake in the southern part of the county is covered with sandy soil. In the southwestern part of the county the soils are rich prairie loams, being an extension of the large area of such soils in Washington county. The leading crops and the acreage devoted to each in 1890 and 1905 were as follows:

	Acreage in 1890.	Acreage in 1905.
Oats	27,832	37,144
Barley	24,312	36,482
Rye	7,853	5,100
Corn	9,636	16,205
Hay	41,604	39,722

While Sheboygan is one of the small counties of the state, yet it ranks fifth in barley production and third in the number of cheese factories, of which there are 115. In the amount and quality of cheese product this county has few superior in the northwest.

The small percentage of unimproved land consists of worthless tracts or of small wooded lots owned in connection with improved lands. Improved lands range in value from \$75.00 to \$100.00 per acre. Sheboygan is the county seat. The following table shows the population statistics of the political divisions of the county in 1905.

SHEBOYGAN COUNTY.

TOWNS, CITIES AND VILLAGES.	Families.	AGGREGATE POPULATION.			COLOR.			Ex-soldiers and sailors.	Militia.
		Male.	Female.	Total.	White.	Colored.	Indians.		
Greenbush	361	502	826	1,728	1,728	.....	26	353
Herman	362	1,054	923	1,977	1,977	.....	13	356
Holland	531	1,230	1,247	2,527	2,527	.....	24	483
Cedar Grove, village...	163	201	210	411	411	.....	8	76
Lima	413	984	923	1,907	1,907	.....	22	359
Lynden	464	870	871	1,741	1,741	.....	15	330
Mitchell	212	526	479	1,005	1,005	.....	6	232
Mosel	162	503	421	924	924	.....	6	163
Plymouth	286	744	703	1,445	1,445	.....	13	261
Plymouth, city:									
ward 1.....	439	842	958	1,800	1,800	.....	.....	.....
ward 2.....	219	483	481	964	964	.....	.....	.....
Total, city, 2,764							33	546	
Rhine	224	608	626	1,234	1,234	.....	8	217
Elkhart Lake, vil.....	106	222	240	462	462	.....	3	93
Russell	85	249	198	447	447	.....	.....	91
Scott	293	734	678	1,412	1,412	.....	15	278
Sheboygan	436	1,129	1,062	2,191	2,191	.....	18	314
Sheboygan, city:									
ward 1.....	801	1,651	1,829	3,480	3,480	.....	.....	670
ward 2.....	430	1,023	1,060	2,083	2,083	*3	.....	501
ward 3.....	271	1,009	570	1,579	1,579	.....	.....	491
ward 4.....	754	1,970	1,715	3,685	3,685	.....	.....	861
ward 5.....	709	1,686	1,516	3,202	3,202	.....	.....	618
ward 6.....	426	1,063	914	1,917	1,917	.....	.....	466
ward 7.....	659	1,636	1,514	3,150	3,149	1	.....	611
ward 8.....	1,100	2,462	2,463	4,925	4,924	.....	1	1,042
Total, city, 24,026							106	3,106	
Sheboygan Falls.....	326	854	736	1,590	1,590	.....	6	311
Sheboygan, village	354	672	739	1,411	1,411	.....	27	258
Sherman	353	938	842	1,780	1,780	.....	13	346
Wilson	210	568	520	1,083	1,083	.....	5	214
Total	11,089	26,806	25,264	52,070	52,065	4	1	382	10,531

*1 Chinaman.

ADELL.

Adell, Sheboygan Co. Population, 300. 18 miles from Sheboygan, 9 miles from Plymouth, the nearest banking point. C. M. & St. P. Ry. Telephone system. Fair freight and passenger service. Western Union telegraph. United States Express.

Clay, sand, stone and timber can be obtained in large quantities. The surrounding country can be readily drawn upon for a labor supply. A malting plant is especially desired here.

Adell is dependent at the present time entirely upon the surrounding country it being the market for approximately \$350,000 worth of farm products annually. A thriving business is carried on with the surrounding country. There is no bank nor drug store. There are 3 grain elevators. The surrounding country is a very rich agricultural district of which 95% is under cultivation.

CEDAR GROVE.

Cedar Grove, Sheboygan Co. Population, 411. 14 miles from Sheboygan, 33 miles from Milwaukee. C. & N. W. Ry. No electric railway at the present time but one is promised to be constructed within a year or two. Telephone system. Western Union telegraph. American Express.

Cedar Grove is an incorporated village in the southeastern part of Sheboygan County, one mile from Lake Michigan. Clay, sand, peat and timber are furnished in large quantities. A canning factory is desired. Vegetables and fruit are raised in large quantities in the surrounding country. There is located at this place a steel range factory and a plant for the manufacture of gasoline engines. There are 2 physicians but no lawyer. There are 3 hotels at this place but a new hotel is greatly desired.

ELKHART.

Elkhart, Sheboygan Co. Population, 462. 18 miles from Sheboygan, 7 miles from Plymouth, the nearest banking point. C. M. & St. P. Ry. There is at present no electric railway connection but a line is promised for 1907. Telephone system and electric light plant. Western Union telegraph. United States Express.

An excellent quality of sand and clay is found near the city. There is no bank at this place. There are 2 grain elevators. Owing to the large quantity of fruit and vegetables from the surrounding country, a canning factory would find this a good location. Corn and peas are the leading products. Elkhart is a rapidly growing summer resort. There are at present 8 hotels furnishing accommodations for several thousand.

and summer visitors. Another hotel is needed here to take care of this summer trade.

GLEN BEULAH.

Glen Beulah, Sheboygan Co. Population, 450. 21 miles from Sheboygan, 6 miles from Plymouth the nearest banking point. C. & N. W. Ry. No electric lines. Stage twice daily to Greenbush. Telephone system. Western Union telegraph. American Express.

The surrounding country can be drawn upon for a labor supply. Fruit and vegetables are grown in large quantities in the surrounding country. Not far from this town there is a very extensive deposit of marl suitable for the manufacture of cement. There are located at this place 2 elevators, a grist mill, and the usual number of grocery stores and repair shops. There is no bank and no drug store.

Glen Beulah is situated near a chain of small lakes which attract each year a large number of summer visitors. Elkhart Lake which is a summer resort of considerable importance is not far distant from this place.

OOSTBURG.

Oostburg, Sheboygan Co. Population, 350. 10 miles from Sheboygan and 43 miles from Milwaukee. Sheboygan is the nearest banking point. C. N. W. Ry. Telephone system. Western Union telegraph. American Express.

Oostburg is an unincorporated village in the southeastern part of Sheboygan county about two miles from Lake Michigan. The surrounding country is a wealthy agricultural district producing large quantities of corn and peas for which there is a canning factory. A considerable interest is manifested in this section of the country in the raising of sugar beets and the location of such factory in southern Sheboygan County would be welcomed by the farmers. There is no bank nor drug store at this place. There is a small saw mill and a flour mill. There is 1 physician but no lawyer. The hotel accommodations at this point are limited to about 40 persons.

PLYMOUTH.

Plymouth, Sheboygan Co. Population, 2,764. 15 miles Sheboygan, 55 miles from Milwaukee. C. M. & St. P. Ry., and C. & N. W. Ry. Electric railway to Sheboygan. Telephone system. Western Union and Postal telegraph. American and United States Express. Good freight and passenger facilities.

There is no water power here. The furniture manufactured in this city, and the live stock, grain, flour and other farm

produce constitute the principal railway shipments. There are located at this city furniture factories, machine shops, flour mill, feed mill, and overall factory. There are 2 banks, 3 weekly papers and 6 churches. There are 5 physicians, 2 lawyers and 20 teachers are employed in the public schools. The surrounding country is devoted almost entirely to the dairy industry.

RANDOM LAKE.

Random Lake, Sheboygan Co. Population, 300. 22 miles from Sheboygan, 16 miles from Plymouth, the nearest banking point. C., M. & St. P. Ry. Telephone system. Western Union telegraph. United States Express.

The city is located in a wealthy agricultural district where practically all the soil is under cultivation. Fruit and vegetables are furnished in large quantities, and a canning factory would be welcomed by the village and surrounding country. There are no factories here at the present time. There is no bank and no drug store, but the usual number of other stores. There is 1 physician but no lawyer. A considerable number of summer visitors are annually attracted to this place.

SHEBOYGAN.

Sheboygan, Sheboygan Co. Population, 24,026. Located on Lake Michigan at the mouth of Sheboygan River, 52 miles from Milwaukee, 134 miles from Madison, and 136 miles from Chicago. On C. & N. W. R. R. which operates lines to the north, west and south. A steamship line operates boats daily from Sheboygan to Chicago and intermediate points. Electric railway to Plymouth. Electric street railway. Water-works. Two telephone systems. Gas and electric light plants. Western Union and Postal telegraph. American and United States Express.

The City of Sheboygan occupies one of the most advantageous locations among Wisconsin cities. Its transportation facilities both by rail and water, its proximity to the hardwood forests and iron mines, together with its cheap fuel obtained by lake route from the east, early marked Sheboygan for a manufacturing center of importance. The considerable increase in manufacturing during the last five years and the resulting growth of population shows the realization of these advantages.

In 1905 there were in this city 98 manufacturing establishments with an aggregate capitalization of \$12,165,128, employing 6,034 wage-earners, paying \$2,165,128 in wages and having a product for that year amounting to \$10,086,648. From 1900

to 1905, the number of factories increased 22.5 per cent; capital increased 68.1 per cent; the number of wage-earners increased 20.9 per cent; wages paid increased 39.5 per cent, and the product increased 46 per cent, a record of growth unequelled by any other city of its class. While Racine is the greatest manufacturing city in the world in proportion to its population, occupying first place in capitalization, total annual wages and total product, but in all of which fields Sheboygan is growing faster than Racine, Sheboygan has taken first rank in the proportion of population which is engaged in factory labor. In Racine 20.1 per cent of the population are factory wage-earners while in Sheboygan this proportion is 25.1 per cent.

Sheboygan is known principally as a center for the manufacture of furniture, over 56 per cent of its total number of wage-earners being engaged in the manufacture of this product. While Chicago and Grand Rapids exceed Sheboygan in the production of all kinds of furniture, Sheboygan ranks first in the manufacture of chairs. Other important industries are the manufacture of refrigerators, veneer, boots and shoes, leather, gloves, foundry and machine shop products, musical instruments, toys, knit goods, liquors, brick, mineral and soda waters and the manufacture and wholesale distribution of cheese.

Sand, clay, stone and timber can be had in abundance near the city. The surrounding country can be drawn upon for a large increase in labor. There are no unoccupied factory buildings in the city.

Sheboygan has 4 banks, 3 daily papers, 4 weekly and 2 semi-weekly papers, nineteen churches, first class hotels, summer hotels, 2 parks and excellent educational facilities. The city has many advantages as a summer resort.

SHEBOYGAN FALLS.

Sheboygan Falls. Sheboygan Co. Population, 1,500. Situated on the Sheboygan River. C. & N. W. Ry. Electric line to Sheboygan, cars leaving every forty minutes. There is a telephone system and electric light plant. Western Union and Postal telegraph. American Express.

Sheboygan Falls is located on the Sheboygan River at a point where a series of rapids furnish an excellent water power of 35 ft. head in three dams. Manufacturers along the river are compelled to resort to stream power at certain periods of the year. In this city there are several large manufacturing plants. The largest woolen mill in the state

is located here. There are also large furniture factories, wagon shops, a tannery, lime kiln and a farm implement factory. Sand, clay, stone and timber can be obtained in large quantities. There are no unoccupied factories in the city at the present time. There are 3 banks, 3 hotels, 5 churches and a good public school system. There are probably more cheese factories in the region tributary to Sheboygan Falls than any other village in the state. Cheese, woolen goods, farm implements, lime and grain constitute the principal shipments. There are 2 physicians, 2 lawyers and 8 teachers.

WALDO.

Waldo, Sheboygan Co. Population, 300. 15 miles from Sheboygan and 5 miles from Plymouth. C. M. & St. P. Ry. No electric lines but route for one being surveyed. Stages daily to Cascade. Telephone connection. Western Union telegraph. United States Express.

There is a small water power at this place. Wood for fuel purposes is furnished in abundance by the surrounding country. Such raw materials as clay, sand, stone and timber are found in large quantities near the town. The surrounding country can be drawn upon for a considerable labor supply.

The surrounding country is a rich agricultural district practically all being under cultivation. Fruit and vegetables are furnished in large quantities. A canning or pickling factory is especially desired at this place. There is located at Waldo 1 grain elevator, a lumber yard, 2 cheese factories, and a general machine and wood-working shop. There is no bank. There are 2 small hotels and 2 boarding houses. A modern hotel is desired.

TAYLOR COUNTY.

Taylor county is located in the central part of the state. The area of this county is 965 square miles. It has a population of 12,481 a gain of 1,219 over 1900. Over one-third of the population is of foreign birth, of which number nearly 60% are Germans. In 1905 less than 108,000 acres had been occupied for farming purposes, of which only 26,524 acres are improved land. The soil of the county along the northern and western part is a

clay loam varying to lighter loams with a gently rolling surface. There are several stretches over which boulders are scattered but not enough to interfere permanently with cultivation. Very little of this soil has passed under cultivation but it is well adapted to the growth of grasses and clover. Stretching southward and covering the larger part of the county the loam becomes lighter and the surface is characterized by belts of ridges and billowy hills with basin-like depressions, swamps and small lakes. This area is generally stony but in some places boulders are entirely absent. Being rather coarse and porous this soil is better adapted to the growth of grain, corn and potatoes, but nevertheless maintains with ease a dairy and stock industry. Garden truck and small fruits can be grown with success. The southern and eastern part of the county is a loamy clay with a gently rolling and well drained surface. In only rare instances are the slopes too steep for cultivation. This soil is very productive and durable and gives promise of being equal to the best agricultural portions of the northwest. All crops do well. The whole county offers uniformly excellent agriculture soil, well adapted to dairying and stock raising and in the southern and eastern parts this has already become the chief source of farm income. Yet of the 965 square miles of area, scarcely one-sixth has been put to agricultural purposes. Taylor county is in the hardwood belt, having heavy growths of birch, basswood, elm, maple and oak, with spruce, cedar and tamarack in the swamps. The principal crops and their acreage in 1890 and 1905 are as follows:

	Acreage in 1890.	Acreage in 1905.
Wheat	14	3.0
Oats	829	3,625
Barley	9	511
Rye	96	409
Hay	6,634	12,169

There are 5 cheese factories and 7 creameries in the county. The price of cut-over lands vary from \$8 to \$12.50 per acre; where it has been improved, the prices range from \$25 to \$60 per acre. The county seat is Medford. The population of the local divisions in 1905 was as follows:



TAYLOR COUNTY APPLES.

TAYLOR COUNTY.

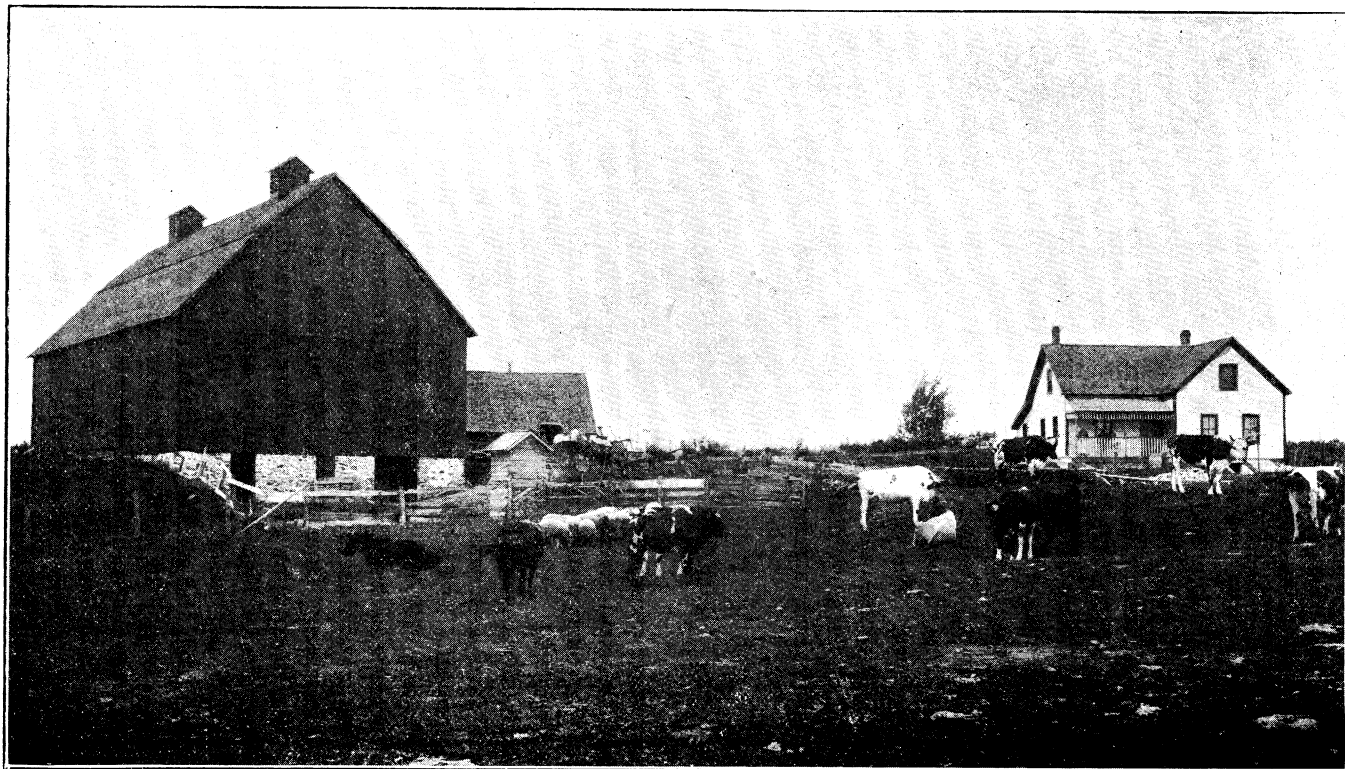
TOWNS, CITIES AND VILLAGES.	Families.	AGGREGATE POPULATION.			COLOR.			Ex soldiers and sailors.	Militia.
		Male.	Female.	Total.	White.	Colored.	Indians.		
Aurora.....	34	102	51	153	153	.....	.....	27
Browning.....	90	253	218	471	471	.....	.....	100
Chelsea.....	141	377	341	718	718	.....	.....	129
Cleveland.....	17	110	31	141	141	.....	.....	75
Deer Creek.....	181	489	414	903	903	.....	.....	147
Goodrich.....	54	132	81	216	216	.....	.....	58
Greenwood.....	94	265	198	464	464	.....	.....	65
Grover.....	45	95	89	184	184	.....	.....	28
Hammel.....	65	183	152	335	331	4	.....	59
Holway.....	64	172	140	312	312	.....	.....	57
Little Black.....	271	750	727	1,477	1,477	.....	.....	294
Maplehurst.....	31	86	63	149	149	.....	.....	31
McKinley.....	29	88	55	143	143	.....	.....	41
Medford.....	284	777	687	1,464	1,456	8	.....	200
Medford, city:									
ward 1.....	139	334	356	690	684	6	.....	.....
ward 2.....	110	247	267	514	514	.....	.....	.....
ward 3.....	149	389	330	719	717	2	.....	.....
Total, city.....	1,923	.....	.....	.....	.....	.....	15	352
Moliter.....	36	89	61	150	150	.....	.....	24
Rib Lake.....	157	406	384	790	790	.....	.....	124
Rib Lake, village.....	241	600	522	1,122	1,122	.....	.....	255
Roosevelt.....	49	159	116	275	275	.....	.....	49
Westboro.....	224	598	493	1,091	1,091	.....	.....	201
Total.....	2,538	6,702	5,779	12,481	12,411	20	53	2,307	

MEDFORD.

Medford, Taylor Co., is a city of 1,923, inhabitants; is located on the Wisconsin Central Ry., 316 miles from Chicago, 290 miles from Milwaukee and 25 miles from Marshfield. Has four passenger trains daily. Good facilities for receipt and shipment of freight. Telegraph and telephone. National Express.

The city is supplied with 2 banks, 3 drug stores, 10 groceries and confectioners, 3 hardwares, 4 general stores, a laundry, 3 shoe stores, machine and wagon shops, a brewery, electric light plant, lumber mill, a building supply company, a basket factory, 4 printing offices, a tannery, 7 hotels, a boarding house, 4 physicians, 5 attorneys at law, a high school employing 18 teachers, macadamized streets, cement walks, shade trees, 2 public parks, etc. Coal is shipped from Milwaukee and Chicago and wood is procured from the immediate locality. Such raw materials as small fruit, vegetables, clay, sand, timber and stone can be supplied, and plenty of help secured., Any kind of wood working establishment, a canning factory, brick yard and a flouring mill are best suited for the place.

The surrounding country is fast coming to the front as a dairy country. The soil is a first class clayey loam, comparatively free from stone, marshes and sandy spots. As yet only about one-third of the land suitable for farming purposes is improved.



A TAYLOR COUNTY FARM HOUSE.

RIB LAKE.

Rib Lake, Taylor Co., is an incorporated village. Population, 1,122. Located on the Wisconsin Central Ry., 15 miles from Medford, 331 miles from Chicago, 235 miles from Milwaukee and 40 miles from Marshfield. Good freight and passenger facilities. Telegraph and telephone. National Express.

The village is supplied with a bank, electric light plant, drug store, 6 groceries, a hardware, 2 saw mills, 3 dry goods stores, a tannery, furniture store, bakery, 3 hotels, 2 boarding houses, a graded school, public library, park, 3 physicians, and 1 lawyer. Wood for fuel is procured in the immediate locality. Such raw materials as vegetables, brick and tile clay, building stone, sand, hemlock and birch timber can be supplied. Plenty of help is to be had. This is a good location for a canning factory, brick yard, box or veneer factory, laundry, and wagon and hub factory. The village is located on a beautiful lake well supplied with fresh-water fish.

The soil of the surrounding country is a clayey loam and excellent for general farming purposes. The land is mostly level.

TREMPEALEAU COUNTY.

Trempealeau county is located in the western part of the state on the Mississippi river. It has an area of 734 square miles. In 1905 the county had a population of 23,857 which was a gain of 734 over 1900. About one-fourth of the population is of foreign birth, Norwegians being greatly in the majority. In 1890 the total farm area was 397,850 acres, of which 204,733 acres were improved. In 1905 the total farm area was 427,708 acres, of which only 242,082 acres were improved, showing an improved acreage of less than one-half of the area of the county. The valuation of these farms including improvements has grown rapidly, increasing from \$4,681,840 in 1890 to \$11,309,234 in 1905. The topography of the southern two-thirds of the county is a succession of high hills, ridges and valleys such as characterize that section of the state. The northern part of the county is within the glacial portion of the state and is covered with a thin mantle of drift. The hills and ridges of this part are not so steep nor so high and the intervening valleys are much wider. The soils covering the larger part of the county are sandy loams. This is a warm and easily worked soil and rather coarse in texture. This soil is well adapted to potato culture.

In the line of animal husbandry it is better suited to sheep and hogs than to dairying on an exclusive scale. In the valleys of the Black and Trempealeau rivers the soil is sandy and not very fertile. In the southern part of the county there is a large tract of prairie loam of exceptional native fertility. The leading crops and the acreage of each in 1890 and 1905 were as follows:

	Acreage in 1890.	Acreage in 1905.
Wheat	14,740	10,483
Oats	45,726	77,675
Barley	1,314	6,592
Rye	4,390	3,973
Corn	24,193	18,714
Hay	52,816	54,845

In 1905 there were 3 cheese factories and 14 creameries in the county. There is very little unimproved land in the county which can be made very productive. Some small tracts of unimproved land such as can be had, range in prices from \$5 to \$20 per acre. The improved lands sell at from \$50 to \$75 per acre. Whitehall is the county seat. The following table shows the population statistics of the political division of the county in 1905:

TREMPEALEAU COUNTY.

TOWNS, CITIES AND VILLAGES.	Families.	AGGREGATE POPULATION.			COLOR.				Militia.
		Male.	Female.	Total.	White.	Colored.	Indians.	Ex-soldiers and sailors.	
Albion	158	444	381	825	825	.....	.....	4	149
Eeva, village	77	180	151	331	331	.....	.....	8	62
Arcadia	502	1,498	1,234	2,732	2,732	.....	.....	12	522
Arcadia, village	285	633	683	1,316	1,314	*1	1	11	218
Burnside	173	449	456	905	905	.....	.....	1	135
Independence, village	137	335	328	663	663	.....	.....	3	111
Caldonia	71	172	135	307	307	.....	.....	6	66
Chimney Rock	196	544	503	1,047	1,047	.....	.....	.....	163
Dodge	84	259	209	468	468	.....	.....	.....	91
Etrick	413	1,195	1,010	2,205	2,205	.....	.....	11	447
Gale	246	764	684	1,448	1,448	.....	.....	.....	171
Galesville, village	214	426	450	876	876	.....	.....	18	356
Hale	298	915	823	1,738	1,733	.....	.....	9	90
Lincoln	124	428	376	804	804	.....	.....	.....	117
Whitehall, village	153	313	357	700	700	.....	.....	11	117
Pigeon	198	657	607	1,264	1,261	.....	.....	9	311
Preston	315	941	822	1,763	1,763	.....	.....	2	77
Blair, village	104	221	240	461	461	.....	.....	6	155
Sumner	141	394	352	746	746	.....	.....	7	129
Osseo, village	124	277	238	565	565	.....	.....	7	215
Trempealeau	215	586	518	1,104	1,104	.....	.....	11	215
Trempealeau, village	149	288	276	564	564	.....	.....	18	90
Unity	211	513	512	1,025	1,025	.....	.....	6	193
Total	4,588	12,462	11,395	23,857	23,855	1	1	166	4,385

*1 Chinaman.

ARCADIA.

Arcadia, Trempealeau Co. Population 1,375. An incorporated village located in the southwestern part of the county on the G. B. & W. Ry., and on the Trempealeau river, 15 miles southwest of Whitehall, the county seat, 22 miles from Winona, Minn., 47 miles from La Crosse, 125 miles from St. Paul and 245 miles from Milwaukee. Western Express. Telegraph and telephone. Good passenger service and shipping facilities.

The village has paved streets, one mile of cement sidewalks, municipal electric light plant and water works, a bank, 2 drug stores, 5 groceries, 2 hardware and 3 general stores, 1 laundry, 2 hotels, high and graded public schools employing 9 teachers, Catholic, German Lutheran, German Methodist, Methodist Episcopal and Unitarian churches, a public library, 3 physicians, 5 lawyers, 3 cigar factories, 2 harness shops, a stock food factory, a brewery, 2 flour mills, 2 brick yards, and 2 creameries. Three weekly newspapers are published.

There is a water power not yet utilized, estimated at 100-horse power. Wood is used for fuel. Fruit and vegetables can be furnished for canning. The village can be supplied with clay, sand, peat and hardwood timber. The timber is suitable for barrel staves, hoops, hubs, spokes, tool handles, etc. A good location for the above industries. Some help can be secured.

About 2-3 of the land surrounding the village, suitable for crop raising is improved. One-third of the land is rough but not stony, some swamps along the river and the remainder is level. All good farming land.

BLAIR.

Blair, Trempealeau Co. Population 461. An incorporated village located in the eastern part of the county on the G. B. & W. Ry., and on the Trempealeau river, 7 miles from Whitehall, the county seat, 43 miles from Winona, Minnesota, 68 miles from La Crosse, 67 miles from Eau Claire, 171 miles from Green Bay, and 245 miles from Milwaukee. Western Express. Telegraph and telephone. Good shipping facilities and passenger service.

The village is located on the bank of the Trempealeau river, has good streets, fine shade trees in the residence portion, is lighted by electricity, has a bank, 2 drug stores, 2 groceries, 3 hardware and 3 general stores, 2 millinery stores, 2 furniture stores, 2 hotels, a boarding house, graded public school employing 5 teachers, Baptist and Lutheran churches, 2 physicians, 2 restaurants, 2 jewelry stores, harness shop, 2 blacksmith shops, a wagon shop, a photographer, 1 flour mill, feed mill, 3 grain elevators, and a potato warehouse. A weekly newspaper is published. A first-class hotel is needed.

Of the water power here, there is about 50-horse power not utilized. Wood is used for fuel, obtained from the surrounding country.

Fruit and vegetables can be furnished for canning. The village can be supplied with clay, sand, timber and stone. A number of men, women, and young persons can be secured in the village to work in factories. There is one idle factory in the village, formerly a butter tub factory.

About 75 per cent of the land surrounding the village, suitable for crop raising, is improved. 50% of the country is level and free from stone, and about 25% is sandy. The soil produces a good quality of tobacco and a tobacco warehouse is needed.

GALESVILLE.

Galesville, Trempealeau Co. Population 876. An incorporated village located on a branch of the C. & N. W. Ry., in the southern part of the county, 25 miles south of Whitehall, the county seat, 19 miles from La Crosse, 154 miles from Madison and 235 miles from Milwaukee. American Express. Telegraph and telephone. Fairly good shipping facilities and passenger service.

The village has good streets, cement walks in business part, shade trees, 2 public parks, a small lake, a good supply of water, is lighted by electricity, has well equipped fire department, a bank, 2 drug stores, 5 groceries, 2 hardwares, 2 dry goods and 1 general store, 2 hotels, 3 boarding houses, high and graded public schools, 4 churches, a Norwegian Lutheran college, an opera house, a public library, 4 physicians, 3 lawyers, 2 machine shops, 3 blacksmith shops, planing mill and sash and door factory, woolen mill, flour mill, cigar factory, cement block manufactory and a creamery. Two weekly newspapers are published. A first-class hotel is needed. A good location for a laundry, starch, canning or pickle factory.

Fruit and vegetables can be furnished in sufficient quantities for canning. There is a good supply of brick, clay and sand in the vicinity. Help can be secured in the village. There is a water power here which is not all utilized. Wood and coal are used for fuel. Wood is plentiful in the vicinity.

The surrounding country is good for farming and about all of the land suitable for crop raising is improved. West of the village the soil is sandy but is quite productive.

INDEPENDENCE.

Independence, Trempealeau Co. Population 663. An incorporated village located on the G. B. & W. Ry. and on the Trempealeau river, 6 miles west of Whitehall, the county seat, 30 miles from Winona, Minn., 133 miles from St. Paul, 175 miles from Madison and 257 from Milwaukee. United States Express. Telegraph and telephone. Shipping facilities and passenger service good.

The village is supplied with an efficient and well-equipped fire department, an excellent system of water works owned by the village, electric light plant, a bank, drug store, 2 hardware and 4 general stores, furniture store, 2 hotels, 2 boarding houses, graded public school employing 8 teachers, Catholic, Methodist and Norwegian Lutheran churches, 2 physicians, 2 lawyers, a \$1,500 village hall, creamery, a flour mill, grain elevators, etc.

Two weekly newspapers are published. Stages tri-weekly to the surrounding towns. A first-class hotel is needed. This is a good location for a canning factory.

There is an undeveloped water power that can be utilized for manufacturing purposes. Wood is used for fuel. Fruit and vegetables can be furnished for canning. The village can be supplied with clay, sand, and timber. Help can be secured in the village.

The surrounding country is good for farming, is very nearly all improved. Wheat, barley, hay and livestock are the principal shipments.

OSSEO.

Osseo, Trempealeau Co. Population 565. An incorporated village located on the C., St. P. M. & O. Ry., in the extreme northeastern part of the county, 18 miles north of Whitehall, the county seat, 45 miles from Eau Claire, 143 miles from St. Paul, 167 miles from Madison and 252 miles from Milwaukee. American Express. Telegraph and telephone. Good shipping facilities and passenger service.

The village has well-kept streets, good walks, public square, some shade trees, plenty of water, 2 banks, 1 drug store, 3 groceries, 2 hardware and 2 general stores, a shoe store, music store, 2 furniture stores, 3 hotels, 5 boarding houses, graded public school employing 4 teachers, Congregational and Norwegian Lutheran churches, 3 physicians, 2 lawyers, 2 millinery shops, 2 blacksmith shops, a wagon shop, 2 meat markets, cement block factory, 3 grain elevators, feed mill, flour mill, lumber dealer, and a monument shop. A weekly newspaper is published. A first class hotel is needed and there is a good hotel building here for sale at a bargain.

Wood is used for fuel, obtained from the surrounding country. Fruit and vegetables can be supplied for canning. Clay, sand, stone and gravel are the natural products. Plenty of help can be secured in the village and surrounding country.

This is a good farming section and about 75% of the land, suitable for crop raising is improved. Very little swampy or sandy land. Good location for a canning factory.

STRUM.

Strum, Trempealeau Co. An unincorporated village of about 250 inhabitants, located on the C. St. P., M. & O. Ry, in the northern part of the county, 18 miles north of Whitehall, the county seat, 22 miles from Fairchild and 55 miles from Eau Claire. American Express. Telegraph and telephone. Fair shipping facilities and passenger service.

Has a bank, drug store, 3 groceries, a harness shop, 2 hotels, a graded school of 2 rooms, and a physician.

Steam power will have to be used here. All kinds of vegetables can be supplied for canning, and clay and sand are the natural products. Help can be secured in the village.

The village is located in a good farming section and a large per cent of the land suitable for crop raising is improved. The soil is a clayey and sandy loam and is very productive.

TREMPEALEAU.

Trempealeau, Trempealeau Co. Population 564. An incorporated village located on the C. & N. W. and the C., B. & Q., and the G. B. & W. Rys., and on the Mississippi river, 20 miles northwest of La Crosse, 113 miles from St Paul, 147 miles from Madison and 225 miles from Milwaukee. Galesville 7 miles northeast is the nearest banking point. Adams and American Express. Telegraph and telephone. Extra good shipping facilities and passenger service.

The village has good streets, shade trees, 2 public parks, plenty of water, a drug store, groceries, 2 hardwares, 3 dry goods and 3 general stores, 1 hotel, 2 boarding houses, high school employing 5 teachers, Catholic, Congregational and Methodist churches, 1 physician, 1 lawyer, harness shop, flour and feed mill meat market, pickle salting station and 3 weekly newspapers.

Steam power is used. Coal and wood are the fuels. Fruit and vegetables can be supplied for canning. The natural products are clay, sand, timber and building stone. Stone is suitable for bases for monuments or range work. A limited amount of help can be secured in the village.

This is a good farming section and nearly all of the land suitable for crop raising is improved. The land along the river is rough, but the larger part is level and free from stone. About 25 per cent of the soil is sandy, and a small per cent swampy.

There is an opening here for a canning or other small manufacturing establishment, electric light plant, a bank and hotel. The village is a summer resort.

WHITEHALL.

Whitehall, Trempealeau Co. Population 700. The county seat of Trempealeau county, is located on the G. B. & W. Ry., and on the Trempealeau river, in the north-central part of the county, 36 miles from Winona, Minn., 61 miles from La Crosse, 75 miles from Eau Claire, 178 miles from Gen Bay, and 250 miles from Milwaukee. American Express. Telegraph and telephone. Shipping facilities and passenger service good.

The village has a good system of water works, sewerage, electric light plant, a public library of 800 volumes, 2 public halls, a bank, a drug store, 3 groceries, 2 hardware and 2 general stores, 5 hotels, good public school system, 6 teachers employed, Baptist, Lutheran and Methodist churches, 3 physicians, 3 lawyers, a flour mill, tobacco warehouse and a creamery. A weekly newspaper is published.

This is a good location for a canning factory, cigar factory, small planing mill and a laundry. Wood is used for fuel, obtained from the surrounding country. A limited amount of help can be secured in the village.

Of the land surrounding the village suitable for crop raising about 75 per cent is improved. More than one-half of the land is hilly. The soil is fertile, no stone or swamps, but about 10 per cent sandy.

VERNON COUNTY.

Vernon county is located in the southwestern part of the state, on the Mississippi river. It had a population in 1905 of 29,161 which was an increase of 810 over the census of 1900. Nearly one-sixth of the population is foreign born, of which number Norwegians are by far the most numerous. The county has an area of 792 square miles, of which 471,283 acres or 92% of the total area has been occupied for farming. Not half of this acreage has been improved however, the total area of the improved farm lands in 1905 being 248,779. The total farm area and the amount of improved land in 1890 and 1900 was 448,520 acres and 223,877



A TYPICAL WISCONSIN FARM SCENE.

acres respectively. The valuation of the farm lands, including improvements, increased during these years from \$6,262,070 to \$14,015,048 or nearly 125%. The topography of the county is generally rough. In the western part, along the Mississippi river, the surface is especially rough, being a series of ridges and steep bluffs intersected by numerous deep valleys and ravines. In the central and eastern part the hills are not so high nor the slopes so steep, making the surface a succession of flat top ridges and valleys. The soils in this county are mainly light clayey and prairie loams, except along the Mississippi and tributary rivers where the soils are of a light sandy nature but very fertile. Owing to this fact, together with the very rough topography in these districts preventing cultivation, sheep raising has become a leading industry. Vernon county ranking first in the state in the number of sheep. Along the watersheds between the leading rivers the soil is an excellent quality of prairie loams and medium clayey loams well adapted to general farming and stock raising. The leading crops and the acreage in 1890 and 1905 were as follows:

	Acreage in 1890.	Acreage in 1905.
Wheat	22,837	6,700
Oats	46,949	55,372
Barley	4,467	6,888
Corn	28,711	26,025
Tobacco	338	5,519
Hay	42,816	63,150

There are 10 cheese factories, 8 creameries and 7 skimming stations in the county. The tobacco industry is of comparatively recent growth and its rapidly growing acreage means a substantial increase in agricultural earnings. During the last year a considerable acreage has been devoted to the raising of sugar beets. Owing to the topography of the county, the price of land varies widely. Along the rivers in the region of hills and ravines unimproved land ranges in price from \$10 to \$15 per acre. Improved farm lands average in price about \$50 per acre, but there are numerous tracts where the price is as high as \$100 per acre. Viroqua is the largest city and county seat. The population of the local political divisions in 1905 was as follows:

VERNON COUNTY.

TOWNS, CITIES AND VILLAGES.	Families.	AGGREGATE POPULATION.			COLOR.			Ex-soldiers and sailors.	Militia.
		Male.	Female.	Total.	White.	Colored.	Indians.		
Bergen	170	492	418	910	910	.....	.....	4	174
Stoddard, village	85	184	172	356	356	.....	.....	1	86
Christiana	260	714	637	1,351	1,340	.....	11	3	247
Westby, village	215	375	392	767	767	.....	.....	.....	155
Clinton	235	620	568	1,188	1,188	.....	.....	9	223
Coon	264	772	666	1,433	1,433	.....	.....	2	246
Forest	241	641	591	1,232	1,150	59	23	21	252
Franklin	264	698	591	1,289	1,289	.....	.....	9	296
Genoa	207	502	517	1,019	1,019	.....	.....	11	148
Greenwood	191	467	441	908	908	.....	.....	7	180
Hamburg	229	600	519	1,119	1,119	.....	.....	6	254
Harmony	187	561	479	1,040	1,040	.....	.....	8	173
Hillsboro	241	621	530	1,151	1,150	1	.....	17	237
Hillsboro, village	206	390	414	804	804	.....	.....	14	152
Jefferson	272	804	706	1,510	1,510	.....	.....	7	266
Kickapoo	202	483	4 8	896	896	.....	.....	13	178
Readstown, village	127	260	256	516	516	.....	.....	13	75
Liberty	100	260	230	490	490	.....	.....	19	93
Viola, village	64	117	128	245	245	.....	.....	14	42
Stark	198	449	430	879	879	.....	.....	15	173
La Farge, village.....	206	435	392	827	827	.....	.....	17	182
Sterling	234	639	532	1,171	1,171	.....	.....	11	213
Union	161	457	40	857	857	.....	.....	3	143
Viroqua	324	923	849	1,772	1,771	1	.....	16	314
Viroqua, city:									
ward 1.....	157	338	353	691	691	.....	.....	.....	.....
ward 2.....	156	260	348	608	606	*2	.....	.....	.....
ward 3.....	193	353	380	733	733	.....	.....	.....	.....
Total, city, 2,032								48	347
Webster	243	623	531	1,154	1,154	.....	.....	13	173
Wheatland	145	356	311	667	637	.....	.....	8	97
De Soto, village.....	89	149	144	293	293	.....	.....	10	46
Whitestown	187	459	419	918	907	11	.....	14	186
Ontario, village	91	181	181	362	362	.....	.....	16	66
Total	6,135	15,228	13,933	29,161	29,053	74	34	24	5,417

*2 Chinamen.

†Part in Crawford county.

HILLSBORO.

Hillsboro, Vernon Co. An incorporated village having a population of 804. Located on the H. & N. E. Ry., 5 miles from Union Center, 205 miles from Chicago, 129 miles from Milwaukee and 68 miles from La Crosse. Telegraph and telephone. American Express.

The village is supplied with 2 banks, drug stores, 4 groceries, a general store, 1 hardware, a brewery, handle factory, stave and saw mills, planing mill, a creamery, weekly newspaper, flouring mill, 5 physicians, 1 lawyer, a free library, a high school employing 8 teachers, hotel and boarding house. Wood for fuel is secured from the surrounding country. Such raw materials as fruit, vegetables, clay, sand, stone and timber can be supplied and 125 laborers engaged. A canning or woodwork-

ing establishment is best suited for the place and it would be a good location for an electric light plant.

Hillsboro is located in an excellent farming district, the soil being a clayey loam; the land somewhat rolling but most of it capable of being improved.

LA FARGE.

La Farge, Vernon Co., is an incorporated village having a population of 827; is located on the C. M. & St. P. Ry., 51 miles from Wauzeka, 213 miles from Milwaukee and 131 miles from Madison. Fairly good freight and passenger facilities. Telegraph and telephone. U. S. Express.

This place is provided with a bank, dry goods store, 3 groceries, 2 hardwares, 3 general stores, a shoe store, harness shop, 2 restaurants, 2 millinery stores, 2 lumber yards, 2 hotels 4 blacksmith shops, 1 photographer, a newspaper, 4 physicians, 1 dentist, 1 lawyer, a creamery, a grist mill, an arm and pin factory and a high school. Wood for fuel is obtained in the immediate locality. Such raw materials as fruit, vegetables, clay, stone, tobacco, timber and sand can be supplied and help secured. Oak and other hardwood lumber is annually shipped from here in large quantities to supply furniture and wood working factories of other cities. A water power can be developed. A woodenware factory, furniture factory or any other establishment using timber as the principal raw material, a canning factory, tobacco or cigar factory, tobacco warehouse or a knitting factory is best suited for the place. A business college is desired.

The village is located in the Kickapoo Valley which contains some of the most fertile land of the state. The soil is well adapted to tobacco raising, which is fast becoming the leading industry of the farmers. Stock raising and dairying are extensively carried on, the valley lands along the rivers and creeks and the side hills affording excellent pasturage.

ONTARIO.

Ontario, Vernon and Monroe counties, is an incorporated village with a population of 466; located 9 miles from Norwalk and Wilton, the nearest railroad stations on the C. & N. W. Ry. Telephone.

The village is supplied with 4 groceries, 6 general stores, 3 restaurants, feed mill, 2 meat markets, 2 barber shops, saw mill and lumber yard, a jewelry store, 3 blacksmith and repair shops, a physician, high school and 2 hotels.

A part of this village is in Monroe county. About a 300 horse water power can be developed here. A canning factory is best suited for the place. A flouring mill is idle. Such raw materials as fruit, vegetables, clay, sand and stone can be supplied.

This village is situated in the Kickapoo Valley. The valley land is very productive and the hillsides furnish excellent pasture for sheep and cows. The soil of the ridge lands is a clayey loam.

READSTOWN.

Readstown, Vernon Co., is an incorporated village of 516 inhabitants. Located on the C., M. & St. P. Ry., 38 miles from Wauzeka, 200 miles from Milwaukee, 118 miles from Madison, United States Express. Telephone. Freight and passenger facilities fairly good.

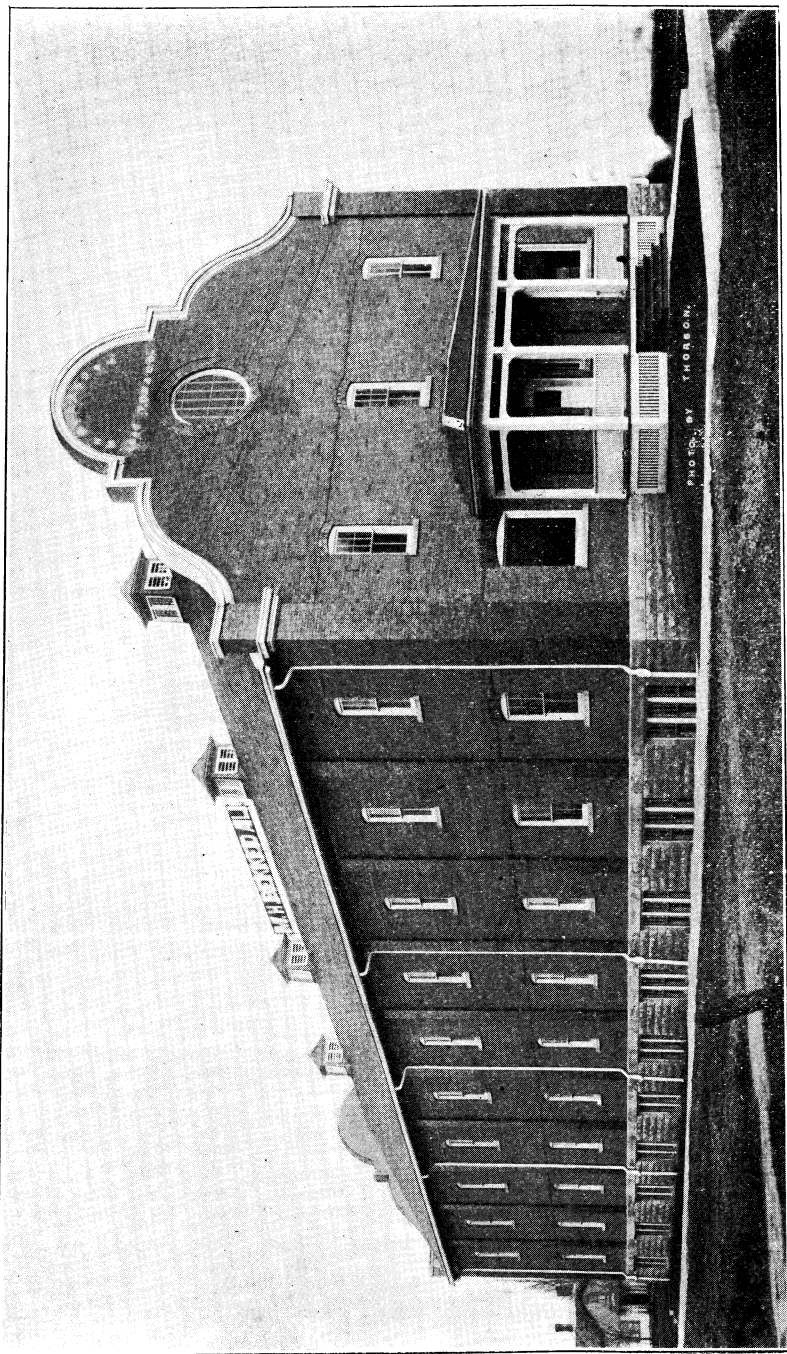
The town is supplied with an electric light plant, bank, drug store, 4 general stores, boot and shoe stores, 3 blacksmith and wagon shops, planing mill, photograph gallery, a tobacco warehouse, meat market, hardwares, 2 grain warehouses, a livery stable, 3 physicians, 1 lawyer, a public school, employing 4 teachers, and a public park. A sixty horse water power can be developed. Such raw materials as fruit, vegetables, sand, brick clay, stone and timber can be supplied and plenty of help secured. A creamery or pickle factory is best suited for the place.

This village is in the Kickapoo Valley in which are located some of the most fertile lands in Wisconsin. Tobacco raising is the leading industry of the farmers although stock raising and dairying are carried on quite extensively.

STODDARD.

Stoddard, Vernon Co., is an incorporated village having a population of 356. Located on the La. C. & S. E. Ry., and the C. B. & Q. R. R. 10 miles from La Crosse, 287 miles from Chicago and 208 miles from Milwaukee. Has first class freight and passenger facilities. Telephone and telegraph. Adams Express.

The village is supplied with a drug store, 2 groceries, a hardware, 2 dry goods stores, a planing mill, flour mill, a newspaper, 1 physician, 1 attorney-at-law, a graded school, 2 hotels and 3 boarding houses. A small undeveloped water power is located here. Coal is shipped from Illinois. Such raw materials as vegetables, fish, tobacco, clay, sand and timber can be supplied and plenty of help procured.



TOBACCO PACKING WAREHOUSE OF M. H. BEKKEDAL,--VIROQUA.

This is one of the largest, finest and most costly houses of its character in the United States. Constructed of St. Louis pressed brick, slate roof, steel ceilings, steam heated. The interior is no less inviting and handsome than the exterior. For convenience and arrangement and modern appliances, this new house surpasses all others in Wisconsin. Two other structures of like character, fully as large and modern, were erected in the same town the past season, making a dozen now operating extensively in the City of Viroqua, which is located in the heart of the tobacco producing section of Wisconsin.

Mr. Bekkedal owns and operates tobacco warehouses at Westby, his residence town; Viroqua, Coon Valley, Stoddard, Soldiers Grove, Boscobel, Edgerton and Gays Mills. His residence town; Viroqua, Coon Valley, Stoddard, Soldiers Grove, consist of 4,500 acres.

About two-thirds of the land suitable for farming purposes surrounding this village is improved, some of the soil is sandy, much of the land hilly and rolling.

VIROQUA.

Viroqua, Vernon Co., is a city of 2,032 inhabitants, located on the C. M. & St. P., and the L. & S. E. railroads. 35 miles from Sparta, 207 miles from Milwaukee and 42 miles from La Crosse. United States Express. Telephone and telegraph. Good freight and passenger facilities.

The city is supplied with an electric light plant, 2 banks, 3 drug stores, 7 groceries, 3 hardwares, 3 furniture stores, 1 book store, 2 jewelry stores, 3 harness shops, 3 clothing stores, 5 dry-goods stores, 1 shoe store, 3 meat markets, 4 hotels, 2 livery stables, 1 music store, 3 newspapers, 7 physicians, 10 attorneys-at-law, a high school employing 15 teachers, boarding houses, plenty of shade trees, and a public library. Wood and coal are used for fuel, wood being procured from the surrounding country and coal from Milwaukee and the mines of Illinois, Ohio and Pennsylvania. Some inducements may be offered for suitable factory. Such raw materials as fruit, vegetables, sugar beets, clay, sand, stone and timber can be supplied, and 400 laborers secured in this locality. A canning or beet sugar factory is best suited for the place.

What is said to be the largest tobacco warehouse in the U. S. has recently been completed here.

The land in this section of the state is among the best. Tobacco culture and dairying are the leading occupations of the farmers. The culture of sugar beets is also becoming a leading industry.

WESTBY.

Westby, Vernon Co., is an incorporated village having a population of 767. Located on the C. M. & St. P. and the L. & S. E. Rys. 29 miles from Sparta, 201 miles from Milwaukee and 36 miles from La Crosse. United States Express. Telephone and telegraph. Good passenger and freight facilities.

The village is supplied with an electric light plant, bank, 2 drug stores, 4 groceries, 3 hardwares, 1 department store, 4 general stores, hotel and boarding house, a graded school, 2 physicians and 1 attorney-at-law. Coal and wood are used as fuel, wood being secured from the surrounding country, and coal from Milwaukee, Illinois, Ohio and Pennsylvania. Such raw materials as fruit, vegetables, tobacco, clay and timber can be supplied. There is a good opening here for a cigar factory; also



MONUMENT ROCK.

One of the remarkable rock formations in the United States. This freak of nature is located seven miles southwest of Viroqua, Wisconsin. It stands on a foundation little less than three feet square, extends heavenward sixty feet, and at its most extended point is twenty feet across.



THREE CHIMNEYS.

These singular and attractive formations stand in an unobstructed view in an open field, with no other rock formations in the vicinity, five miles northwest of Viroqua, Wisconsin. There are three columns nearly distinct in themselves, quite 100 feet high.

a feed mill and a laundry. Four hundred laborers can be engaged.

The land of the surrounding country is as good as there is anywhere in Wisconsin. Tobacco culture and dairying are the leading occupations of the farmers. The soil is a clayey loam and well adapted for any kind of farming.

VILAS COUNTY.

Vilas County is located in the northern part of the state on the Michigan-Wisconsin boundary line. It has an area of 907 square miles. The population in 1905 was only 5,436 which was a gain of 507 over the census of 1900. Nearly one-third of the population is of foreign birth made up largely of Canadians, Germans and Norwegians. Lumbering is the principal industry of the county, nearly the entire population being dependent upon it for support. Agriculture is practically unknown, there being only 2,464 acres of improved farm lands in the whole county in 1905. There is an immense amount of cut over land which, at the low prices prevailing there, offer an excellent opportunity for large numbers of settlers. The surface of the county is underlaid with heavy deposits of glacial drift. The county is dotted with hundreds of small lakes and innumerable small swamps or marshes. With the exception of occasional irregular areas of humus soils, the county is covered with sandy loams. There is considerable land in this county, the fertility of which is not very high. It is generally stony, but not to such an extent as to interfere with cultivation. Where the pine and other forest growth has been removed, the light sandy soils support but a meager vegetation, in most instances bunch grass. From general experience, it is safe to assume that such tracts may be brought into fertile conditions by having sheep herded on them, and the cheapness of such lands affords sufficient inducement for their being put to such use. The total farm area in 1905 was 13,680 acres, the value of which, including improvements, was \$175,550. The chief products of the farms are hay and oats, but a small acreage is being devoted to barley and corn. The range of prices for cut-over and unimproved lands is from \$4 to \$8 per

acre. For lands which have been improved and cultivated, the range of prices is from \$30 to \$50 per acre. A large portion of the western part of the county is occupied by the Lac du Flambeau Indian Reservation. The county seat is Eagle River. The following table shows the population statistics of the local political divisions in 1905:

VILAS COUNTY.

TOWNS, CITIES AND VILLAGES.	Families.	AGGREGATE POPULATION.			COLOR.			Ex-soldiers and sailors.	Militia.
		Male.	Female.	Total.	White.	Colored.	Indians.		
Arbor Vitae	272	1,459	694	2,054	2,047	6	1	2	503
Eagle River	337	853	546	1,399	1,398	1	.....	13	423
Flambeau	99	529	202	731	731	.....	.....	.....	374
Flambeau Indian Res... ..	262	216	315	661	.....	.....	661	.....	95
Hackley	94	406	185	591	556	1	34	1	218
Total	1,004	3,554	1,882	5,426	4,732	8	66	16	1,613

EAGLE RIVER.

Eagle River, Vilas Co. Population, 1,399. 20 miles from Rhinelander, 206 miles from Milwaukee and 270 miles from Madison. C. & N. W. Ry. Water-works, electric light and telephone system. Western Union telegraph. American Express.

Eagle River is located on a chain of lakes near the head waters of the Wisconsin river. One of the finest undeveloped water powers in the state is located here. Efforts are now being made to develop this power so as to produce 12,000 horsepower, and power will be furnished at very low rates or will be given free of charge as an inducement to secure the location of factories. Aside from timber, there are no raw materials. A labor supply can be readily obtained from the surrounding country or neighboring cities. A woodworking plant or paper and pulp mill would find this city a most convenient location owing to its proximity to the forests. There are no factories here at the present time. There are located at Eagle River 1 bank, 1 drug store, several grocery stores, and dry goods stores, 3 churches and 2 newspapers. There are 2 physicians and 5 lawyers. The surrounding country is being occupied for farming.

Eagle River is a very popular summer resort there being a large number of cottages and small hotels on the lakes near

the city. Several thousand tourists and pleasure seekers visit this city annually. There are at present four hotels and three boarding houses.



THE EAGLE WATERS.

HACKLEY.

Hackley, Vilas Co. Population, 400. 17 miles from Eagle River. Electric light. Telephone and telegraph. American Express.

There are located here at the present time, a saw mill and planing mill, cooperage plant and chemical plant for the manufacture of wood alcohol and charcoal. Hackley has no bank, Eagle River being the nearest banking point. There is one physician but no drug store. The retail business is conducted almost entirely through one general store.

Hackley is located on the banks of Twin Lake. There is considerable clay obtainable from the surrounding country, which together with timber are the only raw materials. About 500 working men could be secured from the neighboring towns and villages. Factories manufacturing timber products are best suited for this place.

Hackley is an excellent summer resort and is visited annually by a large number of summer visitors. There is one hotel and one boarding house; but accommodations are not sufficient for the increasing number of tourists. A new hotel is greatly needed here.

STAR LAKE.

Star Lake, Vilas Co. Population, 500. 25 miles from Eagle River and 20 miles from Minocqua. C. M. & St. P. Ry. Western Union telegraph. United States Express.

The surrounding country is as yet very thinly settled and the agricultural product is very light. Timber and sand are the only raw materials obtainable in large quantities. There are no factories here at present. A bank is greatly needed; Minocqua being the nearest bank point. There are about fifteen lakes of different sizes within a radius of a few miles from town, which is itself situated on the shores of a small lake. There is one hotel with accommodations for 150, which is adequate for the present.

WALWORTH COUNTY.

Walworth county is located in the southeastern part of the state on the Illinois line. It has an area of 562 square miles. The population in 1905 was 30,491, a gain of 1,298 over the census of 1900. Only a small proportion of the population, less than one-sixth, is of foreign birth and of this number nearly one-half are Germans. Walworth county is one of the oldest counties in the state and has practically no unimproved land except small tracts owned in connection with improved farms. The total farm acreage in 1905 was 325,208 acres. The value of the farms including improvements has increased from \$15,969,720 in 1890 to \$19,982,104. The surface of most of the county is rolling and somewhat hilly. The soils are nearly all of an excellent quality and well adapted to all kinds of farming. The light clayey loam soils predominate, but there are many irregular tracts of prairie loams scattered throughout the county. Irregular areas of humus soils, composed mainly of muck and peat are found in the different parts of the county. There are also many small lakes. The leading farm crops and the acreage devoted to each in 1890 and 1905 were approximately as follows:

	Acreage in 1890.	Acreage in 1905.
Oats	29,632	39,229
Barley	25,366	18,124
Rye	10,766	2,356
Corn	39,853	57,044
Hay	60,035	48,994

Walworth county possesses a large and growing dairy and stock raising industry. It is located in Wisconsin's richest dairying district. There is very little cheese manufactured, the dairy industry being largely centered in the manufacture of butter, there being 48 creameries and 2 skimming stations in the county. Truck farming is also an important source of income. Unimproved land ranges in prices from \$40 to \$65 per acre and is used almost exclusively for pasturing. Improved farms range from \$80 to \$115 per acre, but transfers for as high as \$125 per acre are not uncommon. Elkhorn is the county seat. The population of the local political divisions for 1905 is shown by the table on page 808.

DARIEN.

Darien, Walworth Co. Population, 500. 9 miles from Elkhorn. C. M. & St. P. Ry. There are no electric lines at present but a route for one has been surveyed. Telephone and telegraph. United States Express.

Darien is at present dependent entirely upon the farming country surrounding it. Sand and gravel are the principal raw materials. Butter, cheese, oats, hay and barley are shipped from this place. There are two large elevators here. A canning factory and a cement works are especially desired. There is one hotel with accommodations for twenty persons. Another hotel is needed.

DELAVAN.

Delavan, Walworth Co. Population, 2,321. 6 miles from Elkhorn, 62 miles from Milwaukee. C. M. & St. P. Ry. There are no electric railways but one has been surveyed. Water-works. Electric light plant. Telephone and telegraph. United States Express.

Delavan is not a factory city. Its chief prominence is as a summer resort. Delavan Lake, located two miles away, is a popular summer resort and offers unsurpassed facilities for boating, bathing and fishing. There are many cottages along the lake shore. There are ample hotel accommodations for the present. A chautauqua assembly holds a meeting at the lake each summer. The Wisconsin School for the Deaf is located at this city. There are eight physicians and 8 lawyers at this place. Delavan is surrounded by a very rich agricultural and dairy country. Sand, clay and stone can be obtained in large quantities.

WALWORTH COUNTY.

TOWNS, CITIES AND VILLAGES.	Families.	AGGREGATE POPULATION.			COLOR.				
		Male.	Female.	Total.	White.	Colored.	Indians.	Ex-soldiers and sailors.	Militia.
Bloomfield	158	466	390	856	856	.....	.....	3	209
Genoa Junction, vil... ..	180	374	326	710	710	.....	.....	12	147
Darien	321	631	603	1,234	1,221	13	.....	19	253
Delavan	234	505	444	949	946	3	.....	10	167
Delavan, city:									
ward 1.....	164	361	397	757	743	14	.....	.....	.....
ward 2.....	197	345	402	747	744	3	.....	.....	.....
ward 3.....	240	347	460	817	800	17	.....	.....	.....
Total, city...2,321									
East Troy	196	495	451	946	946	.....	.....	57	337
East Troy, village....	176	273	328	601	601	.....	.....	14	201
Elkhorn, city:									
ward 1.....	146	270	320	590	590	.....	.....	7	85
ward 2.....	304	302	334	636	636	.....	.....	12	85
ward 3.....	463	272	320	592	592	.....	.....	11	75
Total, city...1,818									
Geneva	204	618	510	1,128	1,128	.....	.....	6	237
Lafayette	217	535	432	967	966	1	.....	9	238
La Grange	193	434	387	821	821	.....	.....	8	164
Lake Geneva, city:									
ward 1.....	282	519	586	1,105	1,104	1	.....	.....	.....
ward 2.....	195	462	563	1,025	1,024	1	.....	.....	.....
ward 3.....	303	662	657	1,319	1,318	*1	.....	.....	.....
Total, city...3,439									
Linn	225	762	558	1,350	1,348	2	.....	43	702
Lyons	290	690	614	1,304	1,304	.....	.....	4	323
Richmond	160	410	318	728	724	4	.....	16	237
Sharon	275	565	499	1,064	1,064	.....	.....	3	150
Sharon, village	287	418	511	929	924	5	.....	8	241
Spring Prairie	227	554	451	1,025	1,024	1	.....	25	129
Sugar Creek	221	498	434	932	932	.....	.....	9	214
Troy	224	544	467	1,001	1,004	.....	.....	19	215
Walworth	450	973	922	1,897	1,897	.....	.....	12	201
Walworth, village	173	328	319	647	647	.....	.....	17	462
Whitewater	164	416	343	759	759	.....	.....	11	123
Whitewater, city:									
ward 1.....	251	407	460	867	867	.....	.....	.....	.....
ward 2.....	372	529	771	1,300	1,300	.....	.....	.....	.....
ward 3.....	282	406	535	941	941	.....	.....	.....	.....
Total, city...3,108								52	207
Total	7,767	15,382	15,175	30,557	30,491	66	.....	405	5,781

*1 Chinaman.

EAST TROY.

East Troy, Walworth Co. Population, 601. 12 miles from Elkhorn, $4\frac{1}{2}$ miles from Troy Center, the nearest shipping point on the C. M. & St. P. Ry. Stage twice daily to Troy Center and Lake Beulah. Telephone system. Gasoline arc lights. Lake Beulah is $4\frac{1}{2}$ distant on the Wis. Central Ry.

There are located here 1 bank, 2 drug stores, the usual number of retail stores, flouring mill, planing mill, cigar factory, and a creamery. There is a water power which is not yet utilized.

East Troy occupies an important position as a summer resort. It has 5 hotels with accommodations for about 800 people which are ample for the present. East Troy is located

on three picturesque lakes. Three other lakes are within a short distance. There are many summer cottages along the shores of these lakes which are visited by about 2,000 people each summer.

ELKHORN.

Elkhorn, Walworth Co. Population, 1,818. 41 miles from Racine, 56 miles from Milwaukee and 69 miles from Madison. C., M. & St. P. R. R. United States Express. Telephone and telegraph.

This city has an electric light plant, 2 banks, the usual number of general stores, 2 newspapers, 6 churches, a public library, an opera house, excellent public school buildings and a large cheese factory is being built this year. There are 5 physicians and 4 lawyers. There are 2 hotels with accommodations for about 100 persons which is ample for the present. Elkhorn is not at present a prominent summer resort but has many advantages along this line, is not a manufacturing city but could be made one. Coal is the principal fuel. Sand and a good quality of clay can be furnished in abundance. Almost any small factory would find this a convenient location. The surrounding country could be drawn upon for several hundred laborers.

FONTANA.

Fontana, Walworth Co. Population, 350. 11 miles from Elkhorn, 4 miles from Williams Bay. C. & N. W., and C. M. & St. P. Rys. It is connected with Harvard, Ill., 10½ to the south, by electric railway which carries both passenger and freight. Telephone and telegraph. American and United States Express.

In Fontana there are several excellent locations for factories admitting shipping facilities over two railroads. There are two small water powers at this place not utilized at present but which some small factory could easily develop. Sand, gravel and crushed stone can be furnished in large quantities. Fontana is located in the midst of a rich farming and dairying community. Fruit, vegetables and milk can be furnished in large quantities. A canning or pickling factory and a milk condensing plant are desired here. Fontana is a popular summer resort being located at the head of Lake Geneva. There are four hotels and several boarding houses with accommodations for about one thousand persons. Another hotel is needed.

GENOA JUNCTION.

Genoa Junction, Walworth Co. Population, 710. 20 miles from Elkhorn, 2½ miles from Richmond. Located at the junction of two divisions of the C. M. & St. P. R. R. Electric light plant. Telephone system. Western Union telegraph. American Express.

Sand, peat and gravel can be obtained in abundance. Genoa Junction is at present dependent almost entirely upon the surrounding agricultural district which is the center of an important dairying industry and the shipping point for large quantities of farm products. There is located here a milk condensing plant. A sterilized milk concern was operated for some time, but failed owing to lack of capital. There are 2 banks, 1 grocery store, several retail stores, 3 physicians and 1 weekly newspaper. There are 2 hotels and 2 boarding houses, but the accommodations are not adequate. Genoa Junction is not at present a summer resort but has many advantages in this direction, and offers excellent shipping facilities for any industries locating here. Sand, peat and gravel can be obtained in abundance. Vegetables and fruits could be furnished in large quantities for a canning or pickling factory.

LAKE GENEVA.

Lake Geneva, Walworth Co. Population, 3,449. 10 miles from Elkhorn, 53 miles from Milwaukee and 70 miles from Chicago. C. & N. W., and C. H. & L. G. Rys. Stages to Springfield three and one-third miles distance to meet C. M. & St. P. Ry. trains; fare 50 cts. Electric light plant. Telephone and telegraph. American Express.

The lake offers an excellent water power at this place. Clay, sand and stone are the principal raw materials. There are located here at present 2 banks, 2 drug stores, the usual number of retail stores, and several lumber, cement and coal yards. There are 7 churches and 2 weekly newspapers, several physicians and 6 lawyers. Twenty-nine teachers are employed in the public schools. Lake Geneva has a national reputation as one of the most beautiful summer resorts in the country. The shores of the lake which bears the same name as the city are dotted with many magnificent summer homes and villas erected by Chicago and St. Louis families. Several large steamers and a fleet of small boats are in constant readiness to meet parties and take them to the different parts of the lake. There are at present 3 hotels and 7 boarding houses, but accommodations are entirely inadequate for handling the large summer trade. Excellent inducements will be offered to secure the location of a large summer hotel.

LYONS.

Lyons, Walworth Co. Population, 500. 10 miles from Elkhorn and 5 miles from Burlington, the nearest banking point. C. M. & St. P. Ry. No electric railway but a route for one has been surveyed. Telephone system. Western Union telegraph. United States Express.

Lyons is located on a water power stream where about 150 horse power could be developed for some factory. There are no factories here at the present time. The surrounding country can be drawn upon for a labor supply. A bank is greatly needed. Lyons is dependent almost entirely upon the agricultural regions surrounding it. Seventy per cent of the land is under cultivation. Clay, peat and stone are the principal raw materials, and large quantities of fruit and vegetables are being raised. A canning factory would find this a convenient location. There is 1 small hotel which furnishes ample accommodations.

SHARON.

Sharon, Walworth Co. Population, 929. 18 miles from Elkhorn, 17 miles from Janesville. C. & N. W. Ry. Telephone and telegraph. Gas plant. American Express.

Sharon is the center of a rich agricultural community which has resulted in its being an important shipping place for live stock, grain, butter and produce. There are located here at present 1 bank, 2 drug stores, several grocery and dry goods stores, feed mill, planing mill and creamery. There are 6 churches, 6 physicians and no lawyers. There are no factories here at present but the village desires to secure the location of a pickling factory and a milk condensing plant. Labor can be readily obtained from the surrounding country and coal is the principal fuel. Two hotels furnish ample accommodations.

SPRINGFIELD.

Springfield, Walworth Co. Population 250. 8 miles from Elkhorn, 4½ miles from Lake Geneva, the nearest banking point. C., M. & St. P. Ry. Stages daily to Spring Prairie, Bowers and Lake Geneva. Telephone and telegraph. United States Express.

Springfield is dependent entirely upon the surrounding country, being the market for a large quantity of farm products. There is no water power. Coal is the principal fuel which is received from Chicago and Milwaukee. Sand, and an excellent quality of clay could be obtained near the city. A brick and tile industry was formerly located at this place,

but was a failure owing to insufficient capital. Large quantities of fruit and vegetables could be furnished for a canning or pickling factory if located here.

WALWORTH.

Walworth, Walworth Co. Population, 650. 12 miles from Elkhorn, 70 miles from Chicago. C., M. & St. P. Ry. and C. H. & Lake Geneva Electric Ry., which connects with C. & N. W. line eight miles from this place. Telephone and telegraph. Electric light plant. United States Express.

Walworth is at present dependent almost entirely upon the agricultural community, the surrounding country being one of the richest farming communities in the state. There are located here 1 bank, 2 drug stores, the usual number of retail stores, a feed mill, milk condenser, elevator, 1 weekly newspaper, a creamery and hardware factory. There are 2 physicians and 1 lawyer. Eight teachers are employed in the public schools. There are no unoccupied factories in this city at the present time. A bank, lumber yard, planing mill and canning factory are especially desired. Clay, sand and stone can be obtained in abundance. About 500 persons could be secured from the neighboring country to work in factories.

Walworth is becoming a popular summer resort. It is located within two and one-half miles from Lake Geneva with which place it is connected by electric line. There are two hotels with accommodations for about 100 persons.

WHITEWATER.

Whitewater, Walworth Co. Population, 3,108. 32 miles from Elkhorn, 51 miles from Milwaukee, 45 miles from Madison and 133 miles from Chicago. C. M. & St. P. Ry. Telephone and telegraph. United States Express.

There are located here 2 banks, the usual number of stores, 2 printing offices, 2 creameries, a tannery, 3 machine shops, flouring mill, an electric light plant, waterworks system, 10 physicians, 7 lawyers, a dairy supply company, cheese box factory and a plant for the manufacture of fountain pens. There is a water power at this place which is not fully utilized but no unoccupied factories. A good quality of clay, sand, peat, limestone and hardwood timber can be obtained from the surrounding country. A canning or pickling factory is especially desired here owing to the large quantities of vegetables raised in the vicinity. Whitewater is located in the midst of an extensive cheese

and butter manufacturing district which has resulted in its being a shipping point for immense quantities of butter, cheese and eggs.

Whitewater is an important educational center. It is the seat of one of the state normal schools. This city is not a summer resort.

WILLIAMS BAY.

Williams Bay, Walworth Co. Population, 600. 6 miles from Elkhorn, 6 miles from Lake Geneva, the nearest banking point. C. & N. W. Ry. There is an electric line within $3\frac{1}{2}$ miles of the village. Telephone and telegraph. American Express.

Williams Bay is located on the north shore of Lake Geneva occupying one of the most beautiful locations on the lake. Labor could be secured to work in factories. This place is especially important as a summer resort. It is visited annually by several thousand people. The largest observatory in the United States, Yerkes Observatory, owned by the University of Chicago, is located here. A bank, hardware store or drug store is desired here.

WASHBURN COUNTY.

Washburn county is located in the northwestern part of the state. The area is 834 square miles. The population in 1905 was 7,483, a gain of 1,962 over 1900. Nearly one-fifth of the population is of foreign birth, the leading nationalities represented being Swedes, Germans and Canadians. Like most of the northern counties Washburn county offers large tracts of land to the settler. Extensive areas which would support a large population and extensive industries, lie untouched. Out of a total area of 533,760 acres, only 122,488 acres had been occupied for agricultural purposes, and of this acreage but 23,138 are improved. This improvement is practically the work of the last decade, for in 1890 there were only 42 farms in the entire county, with an area of 6,315 acres, valued at \$52,000. In 1905 the value of the farms and improvements was \$1,752,238. The surface of the county is broken and hilly. It is traversed by three distinct series of irregular ridges and hills of boulder

clay, gravel and sand. The soil in the central, western and north-western part is sandy and very coarse and open in texture. Some sections can never be made very productive except under methods of irrigation and intensive farming. Not all the soil, however, is equally light, there being many tracts where one type shades into the other, making a loamy sand, whose warmth and ease of cultivation largely counteracts its lack of endurance. These light sandy soils are not materially adapted to either grass or grain and only by irrigating can they be made productive along dairy lines. The soils in the northeastern and southern part of the county are clayey loams of the lighter varieties. The surface is more or less rolling but seldom are the hills so steep as to interfere with cultivation. While the land is in places stony, making its improvement somewhat laborious, wherever it has been cleared, good crops of grain, grasses and corn have been produced. Where the clayey loam borders on the sandy soil potatoes can be grown with excellent results. The principal farm products in 1905 were oats, corn and hay. Land can be had at very reasonable prices. Unimproved lands range in price from \$4 to \$15 per acre, according to quality of soil and location. Improved farm lands range from \$16 to \$50 per acre, and in some cases the best improved farms have sold for as high as \$80 per acre. Shell Lake is the county seat. The population of the cities, villages and towns of the county in 1905 is given in the table on opposite page.

BIRCHWOOD.

Birchwood, Washburn Co. Population, 530. 40 miles from Shell Lake and 16 miles from Rice Lake, the nearest banking point. C., M., St. P. & O. and "Soo" Rys. Telephone and telegraph. American and Western Express.

Birchwood is located on a water power stream at a place where about 200-horse power could be developed. There are located here 1 physician, 1 drug store, 1 newspaper, several retail stores, a saw mill and a large veneer and seating plant. A paper or pulp mill or factories manufacturing timber products are especially desired here. A bank is also desired. There are no unoccupied factory buildings. The surrounding country is a good timber and agricultural district, but not over eight per cent has

as yet been improved for farming purposes. Vegetables are grown in small quantities. Birchwood is located in the midst of a group of lakes and has many advantages as a summer resort.

WASHBURN COUNTY.

TOWNS, CITIES AND VILLAGES.	Families.	AGGREGATE POPULATION.			COLOR.			Ex-soldiers and sailors.	Militia.
		Male.	Female.	Total.	White.	Colored.	Indians.		
Barronette	70	192	163	255	355	.....	.....	55
Bashaw	138	343	303	646	649	.....	6	11
Brooklyn	40	103	94	197	197	.....	.....	4
Casey	83	225	177	402	402	.....	.....	3
Chicog	39	79	64	143	141	2	.....	2
Frog Creek	21	59	58	117	117	.....	.....	1
Gull Lake	26	67	43	115	115	.....	.....	3
Long Lake	59	162	125	287	287	.....	.....	.....
Loomis	94	226	195	431	426	.....	5	2
Mills	38	242	170	412	412	.....	.....	5
Minong	74	165	148	313	313	.....	.....	4
Nancy	38	75	88	163	163	.....	.....	3
Sorona	54	142	135	277	277	.....	.....	.....
Shell Lake	251	574	563	1,137	1,105	4	28	21	
Spooner	110	293	241	534	5	9	.....	25
Spooner, village	242	626	544	1,170	1,169	.....	1	13
Spring Brook	106	222	186	408	491	.....	7	5
Stinnett	71	198	178	376	376	.....	.....	2
Total	1,614	4,933	3,430	7,433	7,405	6	72	86	

SHELL LAKE.

Shell Lake, Washburn Co. Population, 1,000. County seat. 103 miles from Minneapolis and 273 miles from Milwaukee. C., St. P., M. & O. Ry. Telephone and telegraph. American Express.

Shell Lake is located on a water power stream, near a group of lakes which serve as an excellent reservoir and permit of the development of an extensive water power. The city has an electric light plant and waterworks system. There are located here 2 physicians, 4 lawyers, 1 bank, 1 drug store, several retail and general stores, 1 flour mill, 1 boat factory, 1 creamery and 2 planing mills. There are no unoccupied factory buildings. Shell Lake offers an excellent location for a starch factory, sash and door factory, and a brick and tile factory. Clay, sand and timber are the leading raw materials. A sufficient labor supply can be easily obtained from the neighboring country. This place is surrounded by a very heavy timber country and is also developing as an agricultural community. About 30 per cent

of the land has been cleared for farming purposes. Vegetables and fruits are being raised extensively.

Being located on the banks of a large lake and within a few miles of several more lakes, this city is well located for development of the summer resort business. There are 2 hotels and 2 boarding houses, but another hotel is needed.

SPOONER.

Spooer, Washburn Co. Population, 1,170. 7 miles from Shell Lake. C., M., St. P. & O. Ry. Waterworks system. Western Union telegraph. American Express.

Spooer is located on a water power stream at which point a large dam has just been constructed. Sand, stone and timber are the leading raw materials. There are no manufacturing plants here at present, but this city has excellent railroad facilities, there being 3 branches of the Omaha Railroad radiating from this point, thus making it a desirable location for the manufacturing of timber products. A labor supply can easily be obtained from the neighboring country. There are 2 banks, 2 drug stores, several general stores, a weekly newspaper, 3 physicians, 2 lawyers, and 5 churches in this city. There are also located here 1 hotel and 2 boarding houses furnishing accommodations for about 150 persons.

The country surrounding Spooer is well adapted for agricultural purposes. Very little land has as yet been cleared for the raising of crops. This city has many advantages as a summer resort.

WASHINGTON COUNTY.

Washington county is located in the southeastern part of the state. It is small having an area of but 423 square miles. The population in 1905 was 23,476. The foreign born number about one-sixth of the total population and are almost exclusively German. Washington county is one of the oldest counties in the state and has long had all its available land under cultivation. The total farm area is 252,473 acres, of which 161,010 acres have been improved. The valuation of these farms including improvements in 1905 was \$16,849,720. The surface of the county is rolling and hilly. A range of hills extends through the central part of the county in a somewhat southwesterly direction, constituting a part of the terminal moraine. The soils in general are

very fertile. Covering the larger part of the county the soils are clayey loams of the lighter and medium varieties, the latter being more common. Extending from the center in a south-westerly direction is a large tract of light clayey loam. The central part of the county and extending to the northern boundary is a calcareous sandy loam. There is practically no marsh land. The chief crops and the approximate acreage devoted to each in 1890 and 1905 are as follows:

	Acreage in 1890.	Acreage in 1905.
Oats	19,845	27,878
Barley	31,737	44,365
Rye	5,206	3,863
Corn	11,335	14,698
Clover Seed	7,466	4,760
Hay	31,259	29,926

Sugar beets are also an important crop. Washington county ranks as one of the leading barley and clover seed producing counties in the state. It has also a strong dairy industry. In 1905 there were 44 cheese factories, 9 creameries and 2 skimming stations within its boundaries. Unimproved land ranges in price from \$20 upward, the price depending upon location and quality of soil. Improved land ranges in price from \$75 to over \$100 per acre. West Bend is the county seat. The table on page 820 gives the population of the cities, towns and villages for 1905:

ALLENTON.

Allenton, Washington Co. Population, 200. An unincorporated village on the W. C. Ry., on the Rock river, 8 miles west of West Bend, the county seat and banking point, 39 miles from Milwaukee, and 124 miles from Chicago. National Express. Telegraph and telephone. Good shipping facilities and passenger service.

The village is supplied with plenty of water, a hardware and 2 general stores, 3 hotels, 3 boarding houses, a public school, 2 physicians, furniture store, blacksmith shop, harness shop, lumber yard and saw and planing mill.

A canning factory can be supplied with fruit and vegetables, and clay, sand and timber are the natural products. A limited amount of help can be secured in the village.

About 80 per cent of land adjoining the village suitable for crop raising is improved. The land is level and free from stone with a small per cent swampy along the river.

WASHINGTON COUNTY.

TOWNS, CITIES AND VILLAGES.	Families.	AGGREGATE POPULATION.			COLOR.			Ex-soldiers and sailors.	Militia.
		Male.	Female.	Total.	White.	Colored.	Indians		
Addison	338	838	834	1,732	1,732	.....	.....	4	316
Barton	253	656	615	1,271	1,271	.....	.....	9	211
Erin	205	583	539	1,122	1,122	.....	.....	1	217
Farmington	269	682	639	1,321	1,321	.....	.....	24	243
Germantown	370	935	950	1,885	1,885	.....	.....	5	370
Hartford	243	665	602	1,267	1,267	.....	.....	6	269
Hartford, city:									
ward 1.....	282	514	612	1,156	1,156	.....	.....	.....	.....
ward 2.....	230	416	480	896	896	.....	.....	.....	.....
Total, city...2,052	.....	.....	.....	.....	.....	.....	.....	21	392
Jackson	328	943	821	1,764	1,764	.....	.....	7	316
Kewaskum	164	415	41	816	816	.....	.....	6	163
Kewaskum, village	169	329	364	693	693	.....	.....	3	127
Polk	269	756	651	1,407	1,407	.....	.....	11	240
Schleisingerville, vil	126	245	243	488	488	.....	.....	2	92
Richfield	312	855	782	1,637	1,637	.....	.....	9	313
Trenton	310	739	795	1,534	1,534	.....	.....	5	319
Wayne	238	658	619	1,297	1,297	.....	.....	7	251
West Bend	143	435	593	828	828	.....	.....	.....	157
West Bend, city:									
ward 1.....	232	536	546	1,082	1,082	.....	.....	.....	.....
ward 2.....	254	626	654	1,280	1,280	.....	.....	.....	.....
Total, city...2,362	.....	.....	.....	.....	.....	.....	.....	21	406
Total	4,735	11,916	11,500	23,476	23,476	.....	.....	132	4,892

GERMANTOWN.

Germantown, Washington Co. Population, 240. An unincorporated village located on the C., M. & St. P. Ry., in the southern part of the county, 16 miles from West Bend, the county seat and banking point, 21 miles from Milwaukee and 106 from Chicago. United States Express. Telegraph and telephone. Good shipping facilities and passenger service.

The village is supplied with water from flowing wells, has 2 general stores, graded school employing 2 teachers, 1 physician, 1 condensed milk factory, lime kiln, 2 lumber yards, harness shop and a meat market.

The village is in need of a good hotel and livery, a good harness maker, shoemaker, tinsmith, barber and a painter.

Steam power is used. Wood and coal are used for fuel. Wood is obtained from the locality and coal from Milwaukee. Vegetables can be furnished for canning. Clay, sand and stone are the natural products. Some help can be secured here.

The surrounding country is all good farming land and about 85 per cent of it is improved.

JACKSON.

Jackson, Washington Co. Population, 250. An unincorporated village on C. & N. W. Ry., 7 miles from West Bend, the county seat and banking point, 27 miles from Milwaukee and 112 miles from Chicago. American Express. Telegraph and telephone. Good shipping facilities and passenger service.

Has 1 hardware and 2 general stores, 2 hotels, graded school employing 2 teachers, 2 physicians, and a flour mill.

Steam power is used. Wood and coal are used for fuel. Wood is obtained from the surrounding country and coal from Milwaukee. Good location for a canning factory which can be supplied with fruit and vegetables. Some help can be secured in the vicinity.

This is a good farming country and 75 per cent of the land is improved. The land is 85 per cent level and free from stone with 10 per cent swampy and 5 per cent sandy.

KEWASKUM.

Kewaskum, Washington Co. Population, 693. An incorporated village in the northern part of the county, on the C. & N. W. Ry., and on the Milwaukee river, 8 miles northwest of West Bend, the county seat, 41 miles from Milwaukee and 126 miles from Chicago. American Express. Telegraph and telephone. Shipping facilities and passenger service good.

The village has good streets, shade trees in the resident section, electric lights, 2 banks, a drug store, 3 groceries, 4 hardware and 3 general stores, 3 hotels, 2 boarding houses, high school employing 7 teachers, Baptist, Catholic, Congregational, Lutheran, Methodist and Reformed churches, 3 physicians, 1 lawyer, city hall, flour mill, machine shop, malt house, saw mill, planing mill, brick yard, lumber yard and a creamery. A weekly newspaper is published. Good location for brick or tile factory and a general store.

There is a small water power not developed. Wood and coal are the fuels used. Wood is obtained from the adjacent country. Fruit and vegetables can be supplied for canning. Clay, sand, timber and stone are the natural products. A limited amount of help can be secured in the village.

The surrounding country is good for farming and is all improved. All good soil excepting a few hills which are sandy.

ST. LAWRENCE.

St. Lawrence, Washington Co. Population, 200. An unincorporated village in the western part of the county, 12 miles southeast of West Bend, the county seat, $3\frac{1}{2}$ miles from Schleisingerville, the nearest railroad station, and 5 miles from Hartford, the nearest banking point.

Has 2 groceries, 1 hardware and 1 general store, 2 hotels, graded public school employing 4 teachers, blacksmith shop, wagon shop, cheese factory, distillery, wholesale liquor dealer, planing mill and a saw mill. A condensing factory could be supplied with milk. Good location for canning factory.

Steam power is used. Coal and wood are used for fuel. Wood is obtained from the surrounding country and coal from Milwaukee. A canning factory can be supplied with fruit and vegetables. There are unlimited quantities of clay, sand, peat and stone near the village, and some available timber. Help can be secured in the village and vicinity.

The surrounding country is good for agricultural purposes and 80 per cent of the land suitable for crop raising is improved. About three-fourths of the land is level and stony, but is all cleared and well improved.

WEST BEND.

West Bend, Washington Co. Population, 2,362. The county seat of Washington county, an incorporated city located on the C. & N. W. Ry., and on the Milwaukee river, 33 miles northwest of Milwaukee, and 118 miles from Chicago. Western Union telegraph. American Express. Telephone exchange. Good shipping facilities and passenger service.

The city is supplied with an excellent system of water works, an efficient fire department, 2 banks, a full complement of stores and shops, a laundry, 3 good hotels, high and graded public schools employing 14 teachers, a free public library. Catholic, Episcopal, Lutheran, Methodist and Reformed churches, 4 physicians and 5 lawyers. The more important industries are carriage and wagon works, flour mills, brewery, 2 malt houses, spoke and bending works, agricultural implement works, a pocketbook and purse factory, collar and harness factory, bicycle factory, pearl button factory, saw mills and 2 creameries. Three weekly newspapers are published. The city will offer good inducements to new manufacturing industries.

The water power is all utilized. Coal and wood are used for fuel. Coal is obtained at Milwaukee. Fruit and vegetables can

be supplied for canning. Clay, sand, peat, timber and stone are the natural products. Plenty of help can be secured in the city.

This is a first class farming section and 80 per cent of the land suitable for crop raising is improved. The land is level and free from stone, good soil, no swamps and a very small per cent of sand.

WAUKESHA COUNTY

Waukesha county is situated in the southern part of the state. In area it is 562 square miles. The population in 1905 was 35,822. Over one-fifth of the population is foreign born, of which number Germans represent considerably over one-half. There is practically no unimproved land in the county, all available for farming having long since been placed under cultivation. The present valuation of the farms including improvements is \$22,745,659. The topography of the county is rather hilly. The so-called better moraine extends in a northeasterly direction through the western part. This consists of a range whose surface is characterized by numerous irregular and circular indentations, varying in depth from 30 to 100 feet. There are many trough-like winding depressions to lakes several miles long. The soils of the eastern half of the county are clayey loams of the medium and heavier varieties. The western half of the county is a light clayey loam. There are several tracts of prairie loam in the southern part. Numerous irregular areas of humus soil, consisting mainly of muck and peat are found throughout the county but are most frequent in the western part. The leading crops and the acreage devoted to each in 1890 and 1905 was as follows:

	Acreage in 1890.	Acreage in 1905.
Oats	29,313	41,444
Barley	32,580	18,128
Rye	3,554	6,416
Corn	23,160	30,072
Hay	55,589	53,589

Considerable interest is being manifested in the raising of sugar beets. Truck is also an important source of farm

income. The stock growing and dairy industry has reached considerable proportions, the latter being represented by 4 cheese factories, 32 creameries, and 5 skimming stations. The unimproved land in the county consists mainly of small tracts owned in connection with improved farms or stretches of un-tillable range land or swamps. The best improved land ranges in price from \$80 to \$100 per acre. Some improved lands not possessing the best qualities of soil ranges from \$40 to \$70 per acre. Good truck farms often sell for \$150 per acre. Waukesha is the county seat. The following table shows the population of the cities, towns and villages for 1905.

WAUKESHA COUNTY.

TOWNS, CITIES AND VILLAGES.	Families.	AGGREGATE POPULATION.			COLOR.			Ex-soldiers and sailors.	Militia.
		Male.	Female.	Total.	White.	Colored.	Indians.		
Brookfield	392	1,007	1,008	2,015	2,015	.....	7	369
Delafield	283	743	632	1,375	1,373	2	11	325	
Hartland, village	182	348	325	673	673	.....	9	96
Eagle	167	442	374	816	816	.....	12	151
Eagle, village	93	147	156	303	303	.....	10	50
Genesee	317	744	626	1,370	1,370	.....	9	275
Lisbon	307	829	731	1,560	1,550	.....	10	202
Menomonee	457	1,199	1,120	2,319	2,319	.....	8	462
Menomonee Falls, vil..	236	477	459	936	936	.....	10	202
Merton	357	873	798	1,671	1,671	.....	4	341
Mukwonago	173	428	374	8	802	.....	3	151
Mukwonago, village ..	150	247	236	483	483	.....	9	73
Muskego	288	767	636	1,403	1,403	.....	13	297
New Berlin	316	932	811	1,743	1,743	.....	11	366
Oconomowoc	284	733	670	1,403	1,400	3	7	292	
Oconomowoc, city:									
ward 1.....	337	589	658	1,247	1,247	.....	.....	.....
ward 2.....	449	853	913	1,766	1,763	*3	.....	.....
Total, city...3,013							23	498	
Ottawa	196	503	399	902	902	.....	5	171
Pewaukee	315	992	792	1,784	1,775	9	3	344	
Pewaukee, village	197	396	367	763	763	.....	10	120
Summit	216	626	629	1,255	1,254	1	9	227	
Vernon	290	704	603	1,307	1,307	.....	9	217
Waukesha	203	488	489	977	976	1	9	188	
Waukesha, city:									
ward 1.....	226	783	518	1,301	1,297	4	.....	.....
ward 2.....	339	721	743	1,464	1,454	10	.....	.....
ward 3.....	170	410	426	836	836	.....	.....	.....
ward 4.....	313	580	694	1,274	1,268	6	.....	.....
ward 5.....	188	381	515	896	896	.....	.....	.....
ward 6.....	266	545	633	1,178	1,177	1	.....	.....
Total, city...6,949							51	1,276	
Total	7,707	18,487	17,335	35,822	35,782	40	252	6,841	

*2 Chinamen.

BROOKFIELD.

Brookfield, Waukesha Co. Population 400. 6 miles from Waukesha, the nearest banking point. Located at the junction of two divisions of the C. M. & St. P. Ry. Telephone system. Western Union telegraph. United States Express.

Brookfield on account of its excellent railroad facilities, there being four lines of the C. M. & St. P. Ry. radiating from this place, offers excellent advantages for the location of manufacturing establishments. There are no factories here at the present time. The surrounding country could be drawn upon for about 200 factory employces. If a canning factory would locate here vegetables could be furnished in large quantities. There are two physicians and one lawyer. There are 3 hotels with accommodations for approximately 100 persons.

DELAFIELD.

Delafield, Waukesha Co. Population 300. 1 mile from Waukesha, 5 miles from Hartland, the nearest banking point, and 2½ miles from Nashotah, the nearest shipping point. There is a daily stage to Nashotah to meet all trains of the C. M. & St. P. Ry. at this place; fare 25 cents. There is an electric railway connecting this place with Waukesha and Milwaukee. This line will be extended to Oconomowoc during the present year. Telephone system. United States Express.

There is now located here a creamery, 2 grist and flour mills, an extensive fish hatchery, a sanitarium and the usual number of stores. A weekly newspaper is published. A bank is wanted at this place. A summer hotel is needed here to care for the rapidly growing summer business. A factory for the canning of fruit and vegetables is greatly desired by the surrounding country. There is located at Delafield, the St. John's Military academy. There is a large amount of clay of excellent quality and also good building stone.

Delafield is built on Nagawicka Lake and is becoming a very popular summer resort. There are two hotels with accommodations for about forty persons.

DOUSMAN.

Dousman, Waukesha Co. Population 300. 13 miles from Waukesha, 8 miles from Oconomowoc, the nearest banking point. C. & N. W. Ry. Telephone system. Western Union Telegraph. American Express.

Sand and building stone are the two leading raw materials. Fruit and vegetables are furnished in large quantities by the surrounding country. A labor supply amounting to from 150 to 200 people can be obtained from the surrounding coun-

try. A canning factory is especially desired here. A bank and drug store are also needed.

Dousman is at present a popular summer resort. It has three hotels with accommodations for about 120 persons and is visited annually by a large number of summer visitors.

DUPLAINVILLE.

Duplainville, Waukesha Co. Population 600. 5 miles from Waukesha, the nearest banking point. C. M. & St. P. and Wis. Central railways. Telephone system. Western Union Telegraph. United States and National Express.

Clay, sand and stone are the principal raw materials. There is one bank and one drug store here. Duplainville is located in a very wealthy agricultural and dairy community. There is now located here a pickle factory and a large creamery. This place is one of the most extensive milk shipping points on the C. M. & St. P. railway. A new hotel is greatly desired here.

This city has also advantages as a summer resort being located about two miles from a large lake.

EAGLE.

Eagle, Waukesha Co. Population, 303. 16 miles from Waukesha, 37 miles from Milwaukee. C. M. & St. P. Ry. Telephone system. Western Union Telegraph. United States Express.

Clay, sand and timber can be obtained in large quantities. Eagle is located in the center of a wealthy lake district. Vegetables are raised in large quantities. A pickle factory is especially desired at this place by the surrounding country. There is 1 bank, 1 drug store, several grocery and drygoods stores, 1 physician but no lawyer. A new hotel is greatly needed.

Eagle is located in a lake region which has made it a popular summer resort. There are two hotels but the accommodations they offer are entirely inadequate for the growing summer resort business. Several thousand people visit the lakes in the neighborhood of Eagle each summer.

HARTLAND.

Hartland, Waukesha Co. Population, 673. 7 miles from Oconomowoc, 10 miles from Waukesha and 23 miles from Milwaukee. C. M. & St. P. Ry. Telephone system and gas plant. Western Union telegraph. United States Express.

Hartland is located on the Bark river at a place where there is a considerable fall and a water power could be developed. A mill was formerly operated by this power but the building was

destroyed by fire and not rebuilt. There is a large amount of clay and sand near the village. There are located at this place 1 bank, 1 drug store, several grocery and drygoods stores, one grain elevator and four churches. There are several hotels at the lakes two or three miles away from the village, but a new hotel is needed at the village. There is a especially wanted here, a canning and pickling factory and a laundry. Any small manufacturing establishment will be offered reasonable inducements. There are two physicians and one lawyer. A weekly paper is published. Hartland is located in the Waukesha county lake district and is a popular summer resort. Over 1,000 people spend their summers at the resorts surrounding this place.

LANNON.

Lannon, Waukesha Co. Population 500. 10 miles from Waukesha, the nearest banking point. C. M. & St. P. Ry. There is a good water supply for household purposes. There are no electric railway connections. There is no gas or electric light plant. Telephone system. Western Union Telegraph. United States Express.

Lannon is located in the midst of one of the finest quarry sections of the northwest. There are located here ten quarries which furnish crushed stone, paving, footing and building stone to the extent of from 30 to 40 car loads per day. Vegetables are raised in large quantities. Lannon is well located for stone quarry and brick and tile manufacturers. Help can readily be obtained from the surrounding country. There are three hotels with accommodations for about seventy people.

MENOMONEE FALLS.

Menomonee Falls, Waukesha Co. Population 936. 14 miles from Waukesha, 13 miles from Milwaukee. C. M. & St. P. Ry. Telephone system, electric light plant. Western Union Telegraph. United States Express.

There is a water power at this city which when improved will develop approximately 800-horse power. Coal is the principal fuel which is obtained from Milwaukee. Inducements would be offered to secure the location of agricultural implement works or vehicle factories. There is located at this place a large beet-sugar refinery, which during 1905 manufactured 40,000,000 pounds of sugar. A large labor supply can be obtained from the surrounding country. There is 1 bank, 1 drug store, several grocery and drygoods stores and a weekly newspaper. The surrounding country is a well settled agricultural section and a canning factory for the canning of peas and corn would find this village a good location.

MERTON.

Merton, Waukesha Co. Population, 200. 12 miles from Waukesha, 5 miles from Hartland, the nearest banking point. C. M. & St. P. Ry. Telephone system. Western Union telegraph. United States Express.

Owing to the large amount of fruit and vegetables raised in the surrounding country, a canning factory is especially desired here and would find this a profitable location. A labor supply could be obtained from the neighboring country. A bank is also needed here. There is one physician but no lawyer. There are only one hotel and two boarding houses at this place. There are several hotels bordering on the lakes a short distance from the village. Merton is becoming a summer resort.

NORTH PRAIRIE.

North Prairie, Waukesha Co. Population, 300. 11 miles from Waukesha, 31 miles from Milwaukee. C., M. & St. P. Ry. Waukesha is the nearest banking point. Telephone connections. Western Union telegraph. United States Express.

Fruit and vegetables are raised in the surrounding country in large quantities. There is an extensive deposit of marl near the village. An adequate labor supply can be obtained from the neighboring country. There are located at North Prairie 1 drug store, several grocery and dry goods stores and 2 churches. The surrounding country is a very wealthy district. A bank is especially desired at this place. A canning factory would find this an excellent location.

North Prairie is becoming a summer resort being visited each season by a large number of tourists. There is a small lake about two miles from the village whose shores are dotted with summer cottages.

OCONOMOWOC.

Oconomowoc, Waukesha Co. Population, 3,013. 31 miles from Milwaukee, 18 miles from Waukesha, 50 miles from Madison and 111 miles from Chicago. C., M. & St. P. Ry. Electric line to Milwaukee is at present under construction. There is an excellent waterworks system, telephone system and electric light plant. Western Union telegraph. United States Express.

There is a water power at this place which is all utilized. Sand, clay, peat and gravel can be obtained in large quantities. Fruit and vegetables are extensively grown in the surrounding country. There are 2 banks, 2 newspapers, immense ice houses and a large sanitarium. The surrounding country can be drawn upon for about 500 persons to work in factories.

Oconomowoc is located in the midst of the Waukesha county lake district, and its beautiful lakes connected by canals, extensive drives and walks, unexcelled boating and fishing facilities have made this place one of the most popular summer resorts of the northwest. Many beautiful summer homes are located on the shores of the different lakes. There are at present 4 hotels with accommodations for 400 people. Few places offer such an excellent location for a summer hotel. The Business League is engaged in advertising the many advantages of this city.

PEWAUKEE.

Pewaukee, Waukesha Co. Population, 763. 19 miles from Milwaukee and 6 miles from Waukesha. C., M. & St. P. Ry. During the summer, steamers from Pewaukee connect at Waukesha Beach with electric cars for Waukesha and Milwaukee. Telephone system. There is no electric light or gas plant. Western Union telegraph. United States Express.

Sand, peat and stone are the principal raw materials. The surrounding country is an agricultural district raising large quantities of fruit and vegetables. There is desired at this place, a canning factory, cold storage warehouse and a stone crushing plant.

Pewaukee is a very popular summer resort being visited annually by several thousand people. Small steamers and a fleet of other boats accommodate summer visitors. The shores of the lake are dotted with many summer cottages.

WAUKESHA.

Waukesha, Waukesha Co. Population, 6,949. 20 miles from Milwaukee, 62 miles from Madison and 102 miles from Chicago. C., M. & St. P., C. & N. W., and Wisconsin Central Rys. Electric line to Milwaukee. An electric railway to Oconomowoc is under construction. There is an excellent waterworks system. Telephone system. Gas and electric light plants. Western Union telegraph. United States, American, and National Express.

Sand and stone are the principal raw materials. The principal manufacturing industries of this city and which have grown very extensively are the manufacture of iron and steel, malleable iron, structural iron, and extensive quarries adjoin the city. Among the chief industries of this city are the mineral springs, the properties of whose waters have given this city a world wide reputation. The shipments of water have grown to immense proportions. There are 2 banks, 3 newspapers, and 11 churches at this place. There are 9 hotels, some of them very large and with accommodations for approximately 3,000 persons. There are several sanitariums on the lake shores near the city. Another first class hotel is needed here. Waukesha is the site of Carroll College which has both academic and

collegiate departments. Wisconsin's State Industrial School for boys is located here. There are 15 physicians, 21 lawyers and 47 teachers are employed in the public schools. Waukesha is one of the finest summer resorts of Wisconsin.

WAUPACA COUNTY.

Waupaca county is located in the east central part of the state. The area of this county is 749 square miles. The population in 1905 was 33,467, a gain of 1,852 over the census of 1900. Over one-fifth of the population is of foreign birth, Germans largely predominating with Norwegians and Danes next in order as to number. It is a wealthy agricultural county possessing an excellent soil. The farm area in 1905 was 335,547 acres, with 165,290 acres improved. While the acreage has not been largely increased, the valuation of the farms has more than doubled during this time, increasing from \$6,422,349 in 1890 to \$13,666,942 in 1905. The surface, as a whole, is rolling and hilly, necessitating short steep grades along many of the roads. The soils of the northern and central parts are clay loams varying to lighter loams. It is generally stony but not to such an extent as to seriously interfere with the tillage. There are considerable areas where the amount of stones is very small and boulders are nearly entirely absent. The forest growth of this soil is mainly such hardwoods as birch, basswood, maple and scattering white pine. This soil is not so well suited to grasses and clover as for corn and potatoes. Garden truck and small fruits grow in abundance. An excellent dairy and stock growing industry maintained with ease, and is destined to occupy a much more important part in the income of the community. The soil of the southern part and also a strip along the western boundary is a rich sandy loam, varying considerably in the relative amounts of sand and clay. The surface soils consist of four to ten inches of light loam, enriched by a variable amount of organic material. The sub-soil is of brownish clay mixed with boulders and pebbles. Considerable wash has taken place in this rolling country and loamy clays are often found in the bottoms. Boulders are most prominent upon the hills and ridges. The forest growth is generally a dense scrub oak and scanty poplar. This soil is good strong land and when prop-

erly farmed is very productive. It surpasses all other soils in the production of potatoes, which in quality are equal to the best in the country. There are numerous irregular swampy tracts in the northern part of the county. Potatoes, dairy products and stock are the principal exports from the farms. The chief crops and their acreage in 1890 and 1905 were as follows:

	Acreage in 1890.	Acreage in 1905.
Wheat	12,564	3,071
Oats	22,963	36,786
Barley	1,056	3,748
Rye	7,330	8,172
Corn	12,709	15,815
Hay	33,867	47,382
Potatoes	11,127	16,130

The dairy interests are represented by 28 cheese factories, 20 creameries, and 6 skimming stations. The price of unimproved land which can be made tillable averages about \$10 per acre. For improved farm lands, the price ranges from \$20 to \$80 per acre. Waupaca is the county seat. The table on page 823 shows the population of the local political divisions for 1905:

CLINTONVILLE.

Clintonville, Waupaca Co. Population, 1,837. 35 miles from Waupaca. 156 miles from Milwaukee. C. & N. W. Ry. Has electric light plant. Telephone system. Western Union telegraph. American Express.

Clintonville is located on a water power stream where considerable power may be developed. Wood is the principal fuel and is obtained from the surrounding country. Clay, sand, stone and timber are the raw materials which can be obtained in large quantities. There are no unoccupied factories here at the present time. Reasonable inducements will be offered to secure the location here of a shoe factory. Clintonville is also well located for establishing a box factory, a canning factory, and for the location of a beet sugar factory. A labor supply can be readily obtained from the surrounding country. There are now located here 2 banks, 3 drug stores, several general stores, a planing mill, 2 shingle mills, 2 saw mills, sash, door and blind factory, a brick and tile-works and 2 weekly papers. There are 4 physicians and 4 lawyers. The

surrounding country possesses an excellent agricultural soil of which about seventy per cent is improved. The principal shipments from here are grain, potatoes, timber products and live stock. There are at present five small hotels with accommodations for about 100 persons; but a new hotel is greatly desired.

WAUPACA COUNTY.

TOWNS, CITIES AND VILLAGES.	Families.	AGGREGATE POPULATION.			COLOR.			Ex-soldiers and sailors.	Militia.
		Male.	Female.	Total.	White.	Colored.	Indians.		
Bear Creek	223	636	501	1,227	1,227	.....	.....	10	164
Caledonia	174	481	475	894	896	.....	.....	7	159
Clintonville, city	407	875	962	1,837	1,831	6	.....	26	297
Dayton	217	485	431	916	916	.....	.....	15	177
Dupont	197	516	483	1,029	1,029	.....	.....	3	164
Marion, village	157	364	382	746	746	.....	.....	6	151
Farmington	431	960	818	1,778	1,778	.....	.....	404	205
Freemont	98	248	220	468	468	.....	.....	2	89
Freemont, village	71	153	147	300	300	.....	.....	3	51
Harrison	119	305	252	557	557	.....	.....	2	104
Helvetia	120	338	247	585	585	.....	.....	4	123
Iola	159	435	384	819	819	.....	.....	13	166
Iola, village	181	422	379	801	801	.....	.....	14	187
Larabee	255	779	693	1,472	1,472	.....	.....	7	203
Lebanon	183	535	447	982	982	.....	.....	4	213
Lind	227	563	521	1,084	1,084	.....	.....	8	165
Little Wolf	224	731	669	1,400	1,400	.....	.....	7	224
Manawa, village	200	437	444	881	881	.....	.....	17	172
Matteson	163	475	3-8	863	863	.....	.....	6	144
Embarrass, village	71	146	139	285	285	.....	.....	4	49
Muckwa	188	533	453	985	986	.....	.....	20	172
New London, city:									
ward 1	169	310	381	721	721	.....	.....	.....	.....
ward 2	157	243	240	483	478	5	.....	.....	.....
ward 4	153	355	354	709	709	.....	.....	.....	.....
ward 5	96	205	209	414	414	.....	.....	.....	.....
Total, city	*3,002							43	456
Royalton	256	675	610	1,285	1,285	.....	.....	19	222
Scandinavia	170	507	446	953	953	.....	.....	3	179
Scandinavia, village	82	182	173	355	355	.....	.....	.....	69
St. Lawrence	251	625	569	1,194	1,192	2	.....	25	221
Union	230	606	617	1,313	1,313	.....	.....	8	195
Waupaca	207	510	446	986	985	.....	.....	8	189
Waupac, city:									
ward 1	206	371	382	753	741	†8	4	.....	.....
ward 2	200	384	416	800	800	.....	.....	.....	.....
ward 3	185	357	377	734	734	.....	.....	.....	.....
ward 4	145	265	321	586	586	.....	.....	.....	.....
Total, city	2,873							78	520
Weyauwega	130	320	270	590	590	.....	.....	7	98
Weyauwega, village	260	477	516	993	993	.....	.....	29	181
Wyoming	119	379	307	686	686	.....	.....	.....	129
Total	7,381	17,368	16,099	33,467	33,442	21	4	508	5,848

*Includes total for Waupaca and Outagamie counties.

†1 Chinaman.



FIELD OF OATS IN NORTHERN WISCONSIN.

FREMONT.

Fremont, Waupaca Co. Population, 300. 16 miles from Waupaca and 7 miles from Weyauwega. Fremont is not located on any railroad, being $3\frac{1}{2}$ miles from the Wisconsin Central line. There is stage twice daily to meet Wisconsin Central trains. Western Union telegraph and telephone. National Express.

Fremont is an incorporated village. There is a tract of land comprising 300 acres which is well located for factory purposes. Wood is extensively used for fuel which is obtained from the surrounding country. Sand, clay and timber are the only raw materials. Fremont is dependent entirely upon the agricultural trade, being the center of a well settled farm community. Fruit and vegetables are grown in large quantities. A canning factory is desired at this place by the surrounding country. A bank is also wanted. There are located here 1 drug store, several general stores, 1 creamery, 1 cheese factory, a saw mill and planing mill. There is 1 physician. Fremont has many advantages as a summer resort. It is located on Wolf river and Partidge lake. Facilities for boating, hunting and fishing are unsurpassed. It has two hotels with accommodations for about 100 persons. A new hotel is desired at this place.

IOLA.

Iola, Waupaca Co. Population, 801. 12 miles from Waupaca, 120 miles from Milwaukee. Iola & Northern Ry. Stage daily to Northland and Norske. Has an electric light plant. Telephone system. Western Union telegraph. United States Express.

Wood is extensively used for fuel. The principal raw materials are sand and hardwood timber. There are no factories here at the present time, but special inducements would be offered to secure the location of a canning or pickling factory. About 100 laborers could be obtained from the surrounding country. There are now located at this place 2 banks, 1 drug store, several general stores, 4 potato warehouses, a flour mill, 2 saw mills, 3 planing mills, a potato starch factory and a creamery. A weekly newspaper is published. A tannery was formerly established here. There are 2 physicians and 1 lawyer. There are 2 hotels and 2 boarding houses, which furnish ample accommodations.

MANAWA.

Manawa, Waupaca Co. Population, 881. 15 miles from Waupaca. G. B. & W. Ry. Telephone system. Electric light plant. Western Union telegraph. United States Express.

Manawa is located on Little Wolf river. There is a water supply at this place of which about 100 horse power has not yet been utilized. Such raw materials as clay, sand, marl, stone and timber can be furnished in large quantities. There is now located here 1 bank, 2 drug stores, several general stores, a lumber company, lath and shingle mill, a brick and lime company, flour mill and a weekly newspaper. There are 2 physicians and 2 lawyers. Reasonable inducements would be offered to secure the location of some wood-working factory, a milk condensing company and a woolen mill. About two-thirds of the surrounding country has been improved for crop raising.

Manawa is not at present a summer resort but could be made one. It is located about two miles from a beautiful lake. It has two hotels with accommodations for fifty persons which are ample at present.

MARION.

Marion, Waupaca Co. Population, 746. 30 miles from Waupaca and 163 miles from Milwaukee. C. & N. W. Ry. Daily stage to Caroline, Pella and Leopolis. Telephone system. Gas plant. Western Union telegraph. American Express.

Marion is an incorporated village. There is a water power at this place. Wood is the principal fuel which is obtained from the

surrounding country. Such raw materials as clay, sand, timber and stone can be obtained in abundance. The surrounding country, about two-thirds of which is improved for crop raising, is a rich soil and produces large quantities of fruit and vegetables. A canning factory is especially desired at this place by the village and also the surrounding country. A labor supply can be readily obtained. There are 3 small hotels but the accommodations are not sufficient. A new hotel is needed. Marion is not a summer resort at present but has many advantages in this direction. A weekly newspaper is published.

NEW LONDON.

New London, Waupaca Co. Population, 3,002. 22 miles from Waupaca, 39 miles from Green Bay and 140 miles from Milwaukee. G. B. & W. and C. & N. W. Rys. Wolf river is navigable to this point. Telephone system. Electric light plant. Western Union telegraph. United States and American Express.

Sand, clay, peat, marl, timber and stone can be furnished in large quantities. Several hundred persons could be easily secured from the surrounding country to work in additional factories. There are now located here 2 banks, 3 drug stores, several grocery and dry goods stores and general stores, 2 weekly newspapers, a saw mill, a boat factory, a large chair factory, a flour mill and factories for the manufacture of bee hives. There is also a canning factory and a milk condensing plant. There are 8 physicians and 5 lawyers. There are 3 hotels and 4 boarding houses which furnish ample accommodations for the present. New London is becoming a popular summer resort.

New London is the center of an excellent farming community, about seventy per cent of the surrounding country being improved for farming purposes.

OGDENSBURG.

Ogdensburg, Waupaca Co. Population, 350. 9 miles from Waupaca, the nearest banking point. G. B. & W. Ry. Western Union telegraph. United States Express.

There is a small water power at this place. Clay, sand and stone are the raw materials which can be obtained in large quantities. Fruit and vegetables could be furnished to supply a canning factory here. About 100 persons could be secured from the surrounding country to work in factories. About sixty per cent of the surrounding country has been improved

for agricultural purposes. There is 1 physician but no lawyer here. One small hotel has accommodations for about twenty persons.

ROYALTON.

Royalton, Waupaca Co. Population, 300. 13 miles from Waupaca and 7 miles from New London, the nearest banking point. G. B. & W. Ry. Western Union telegraph. United States Express.

Royalton is located on the Little Wolf river, at a water power site. About 300 horsepower is not yet utilized. Clay, sand, peat, lime, marl and timber can be obtained in large quantities. Royalton is the center of an extensive farming community. Special inducements will be offered to secure the location of a starch factory or any small industry. Royalton was at one time the seat of a flourishing lumber industry, but its mills have moved away since the heavy sawed timber has been cut. There is 1 physician. A new hotel is wanted here.

WAUPACA.

Waupaca, Waupaca Co. Population, 2,873. 29 miles from Stevens Point, 120 miles from Milwaukee, 155 miles from Madison and 221 miles from Chicago. Wisconsin Central Ry. Telephone system. Electric light plant. Western Union telegraph. National Express.

Waupaca is located upon the Waupaca river at a point where there is a water power of which about 100 horse power is not yet utilized. Peat, sand, clay, marl and timber can be furnished in large quantities. There is an excellent deposit of gravel a few miles from the city. About three hundred persons could be obtained from the neighborhood to work in additional factories. There are located here at the present time 2 banks, 4 drug stores, the usual number of retail stores, 3 newspapers, a flour mill, machine shop, 2 starch factories, 2 planing mills and a saw mill. There are 5 physicians and 8 lawyers. Waupaca is the center of the great Wisconsin potato belt, over 1,000,000 bushels being shipped from this place each season. Four miles from the city and connected with it by electric road is the famous Chain of Lakes, one of the finest summer resorts in the state. On the banks of one of these beautiful lakes is located the Wisconsin Veterans' Home, with a population of about 700. There are 4 hotels with accommodations for about 3,000 persons. There are many cottages along the lake shores. Fishing, bathing and boating are all that can be de-

sired. Three steamers make daily trips. Waupaca is an excellent summer resort and is visited by about 5,000 persons every summer.

WEYAUWEGA.

Weyauwega, Waupaca Co. Population, 1,000. 9 miles from Waupaca, 122 miles from Milwaukee. Wisconsin Central Ry. Telephone system. Electric light plant. Western Union telegraph. National Express.

Weyauwega is located on the Waupaca river at a point where there is considerable water power. There is about 500 horse power not yet utilized. At a point about three miles above the village, there is a suitable site for a water power capable of developing nearly 1,000 horsepower. Such raw materials as clay, peat, sand, stone, marl and timber can be obtained in large quantities. About one-half of the soil of the surrounding country has been improved for agricultural purposes. Large quantities of fruit and vegetables are now being raised. There are now located at this place 2 banks, 3 drug stores, several general stores, 2 creameries, 2 potato warehouses, an elevator and flour mill. Two weekly papers are published. There is an unoccupied factory at this place which was formerly used as a trunk factory, but which failed. This building is located near a water power and has a spur track. About 200 laborers could be secured from the surrounding country. A canning and pickling factory a canning and pickling factory and a brick yard. There is a considerable interest in the culture of sugar beets and the location of a sugar beet factory would meet with the hearty approval of this village and the neighboring country. There are located here 3 physicians, 2 dentists and 3 lawyers. Weyauwega is a summer resort, being located a few miles from a group of lakes. It has excellent hotel accommodations.

WAUSHARA COUNTY.

Waushara county is located in the east central part of the state. The area of this county is 639 square miles. The population in 1905 was 17,643, a gain of 1,671 over the census of 1900. About 16 per cent of the population is of foreign birth, of which number Germans constitute nearly one-half. There are large numbers of Danish and Norwegian settlers. The

total area of the farms of the county in 1905 was 345,441 acres, of which 198,391 acres were improved. In 1890 the total farm area was 313,835 acres with 159,592 acres improved. Since the county was well settled at a comparatively early date, the acreage population devoted to agriculture has not increased as rapidly in recent years as in other counties, but the value of the farms has increased from \$4,230,760 in 1890 to \$10,365,437 in 1905, an increase of 145 per cent during this period. The northwestern part of the county is a prairie-like plane with a sandy soil containing a variable amount of gravel and small pebbles. This soil is warm and readily tilled and well adapted to the growing of vegetables, corn, oats, rye and potatoes, the latter being the principal export crops of the district. Dairy products and live stock are also growing sources of farm income. The larger part of the county is of an uneven and rolling topography, the formation consisting of steep hills and ridges. Boulders of various sizes constitute a prominent feature of the county. The surface soil is sandy loam varying considerably in the relative amounts of sand and clay and enriched by considerable organic material. The subsoil is a brownish clay in which boulders and pebbles are numerous. The soil varies more or less with the surface features. This sandy loam is a strong soil and with proper cultivation is very productive. Like the sandy loams of southern Waupaca county it is well adapted to the growth of corn, potatoes, oats, grasses and clover. It is unexcelled for the growth of potatoes, which in yield and quality equal the best of the country. Waushara, Portage and Waupaca counties constitute one of the wealthiest potato regions in the United States. Next to potatoes, dairy products and stock are the leading farm exports. The soil in the eastern tier of townships is a heavy red clay. There are numerous areas of swampy land in the eastern and southern part of the county. The chief crops and their acreage in 1890 and 1905 were as follows:

	Acreage in 1890.	Acreage in 1905.
Oats	19,637	23,246
Rye	17,238	19,413
Corn	21,096	23,773
Clover Seed	4,368	4,987
Hay	28,633	37,619
Potatoes	6,966	17,999

There are 5 cheese factories, 20 creameries and 14 skimming stations in the county. In the production of cranberries the county ranks second with 664 acres devoted to that purpose. The price of wild unimproved land ranges from \$12 to \$40 per acre. Improved farms range in price from \$40 to \$100 per acre. The most expensive lands are in the eastern part of the county. Wautoma is the county seat. The population of the different political units of the county in 1905 was as follows:

WAUSHARA COUNTY.

TOWNS, CITIES AND VILLAGES.	Families.	AGGREGATE POPULATION.			COLOR.			Ex-soldiers and sailors.	Militia.
		Male.	Female.	Total.	White.	Colored.	Indians.		
Aurora	206	500	475	975	975	.....	.....	20	182
Berlin, city:									
*Part of 2d ward.....	8	23	18	41	41	.....	.....	.....	9
Bloomfield	223	622	563	1,185	1,185	.....	.....	16	219
Coloma	214	482	433	915	915	.....	.....	17	174
Dakota	105	261	227	488	488	.....	.....	6	70
Deerfield	149	389	315	704	704	.....	.....	6	149
Hancock	167	395	340	735	735	.....	.....	19	129
Hancock, village	123	241	227	468	468	.....	.....	20	106
Leon	181	434	368	802	802	.....	.....	9	167
Marion	108	641	395	1,036	1,036	.....	.....	9	199
Red Granite, village ..	85	245	154	399	399	.....	.....	1	144
Mt. Morris	142	326	279	605	605	.....	.....	10	146
Oasis	156	439	358	797	797	.....	.....	11	158
Plainfield	196	463	459	922	922	.....	.....	27	144
Plainfield, village	234	411	418	829	829	.....	.....	33	158
Poysippi	227	527	478	1,005	1,005	.....	.....	19	216
Richford	107	378	273	611	611	.....	.....	1	122
Rose	156	432	375	807	807	.....	.....	3	150
Wild Rose, village....	127	246	251	497	497	.....	.....	10	102
Saxeville	159	465	405	870	870	.....	.....	5	177
Springwater	137	349	284	633	633	.....	.....	12	130
Warren	154	459	346	805	805	.....	.....	8	150
Wautoma	142	363	301	664	664	.....	.....	4	148
Wautoma, village	210	401	449	850	850	.....	.....	24	150
Total	3,716	9,452	8,191	17,643	17,643	.....	.....	290	3,529

*For total see Green Lake Co.

CALOMA.

Coloma, Waushara Co. Population, 250. An unincorporated village located on the W. C. Ry., in the southwestern part of the county, 35 miles from Stevens Point, 73 miles from Madison, and 130 miles from Milwaukee. National Express. Telegraph and telephone. Fair shipping facilities and passenger service.

Has a bank, drug store and 3 general stores, 1 hotel, a boarding house, graded school employing 2 teachers, Methodist Episcopal and Lutheran churches, 1 physician, furniture store, blacksmith shop, harness shop, grain elevator and a creamery.

Steam power is used. Wood and coal are used for fuel. Wood is obtained from the surrounding country and coal from the east. Vegetables are raised and clay, sand and stone are the natural products. Some help can be secured here.

About one-half of the adjacent country is level and free from stone and the rest rough and stony. Seventy-five per cent of the land suitable for crop raising is improved.

POY SIPPI.

Poysippi, Waushara Co. Population, 200. An unincorporated village on Pine river, Poysippi township, 18 miles northeast of Wautoma, the county seat, and 13 miles north of Berlin, the nearest railroad station and banking point. Has telephone connections.

The village has 3 general stores, 1 hotel, no boarding houses, a public school with two departments, 2 physicians, good churches, furniture store, saw mill, flour mill and a creamery.

There is a water power estimated at 100 horse power, not utilized. Wood is obtained from the surrounding country. Fruit and vegetables can be supplied for canning and cucumbers for pickling. This village can be supplied with clay, sand and lumber. Help can be secured in the village and vicinity. Good location for a pickle salting station.

This is a good farming section and 90 per cent of the land is improved. A large per cent of the land is level and free from stone with some swamps.

PLAINFIELD.

Plainfield, Waushara Co. Population, 850. An unincorporated vilalge on the W. C. Ry., in the northwestern part of the county, 18 miles northeast of Wautoma, the county seat, 22 miles from Stevens Point, 87 miles from Madison, 144 miles from Milwaukee. National Express. Telegraph and telephone. Fair shipping facilities and passenger service.

The village is supplied with shady streets, cement walks, is lighted by electricity, has a bank, 2 drug stores, 1 grocery, 2 hardware and 3 general stores, a furniture store, 1 hotel, 3 boarding houses, a \$12,000 high school building, 8 teachers employed. Baptist, Catholic and Methodist churches, \$10,000 opera house, city hall, 3 physicians, 2 lawyers, 6 large potato warehouses, starch factory, flour and feed mill, and a creamery. A weekly newspaper is published. A first-class hotel is needed.

Steam power is used for manufacturing purposes. Wood and coal are used for fuel. Wood is obtained from the surrounding country and coal from Milwaukee and Chicago. Fruit and vege-

tables can be supplied for canning and clay and sand are the only natural products. A limited amount of help can be secured in the village. Good location for a canning factory and pickle factory.

The surrounding country is nearly all level and free from stone. The soil is a sandy loam and 75 per cent of the land suitable for crop raising is improved. This is a prosperous farming country. Dairying and potato raising are the chief occupations.

WAUTOMA.

Wautoma, Waushara Co. Population, 850. An incorporated village on the White river, a water-power stream, and on the C. & N. W. Ry., in Waushara county of which it is the county seat, 54 miles from Fond du Lac, 118 miles from Milwaukee and 203 miles from Chicago. American Express. Telephone and telegraph. Good shipping facilities and passenger service.

The village is located in a good farming community, is well lighted, has 2 banks, 2 drug stores, 4 groceries, 2 hardware and 3 general stores, 1 hotel, 2 boarding houses, high school employing 8 teachers, Catholic, Congregational and Methodist churches, 5 physicians, 3 lawyers, \$10,000 court house, flour mill with a capacity of 125 barrels, a starch factory, cigar factory, and a grain elevator. A weekly paper is published.

There is a small water power here estimated at 60 H. P., not utilized. Wood and coal are the fuels used. Wood is obtained from the adjoining country and coal from Milwaukee. All kinds of vegetables, corn, beans and peas can be furnished for canning. Some help can be secured in the village. This place offers an opening for a potato buyer.

About 75 per cent of the land surrounding the village is improved. The soil is a sandy loam especially adapted for growing vegetables. This is the center of the Wisconsin potato belt and their production is increasing annually. Cucumbers do well in this section and a salting station could be supplied with almost any quantity of pickles.

WINNEBAGO COUNTY.

Winnebago county is located in the east central part of the state. The area is 472 square miles. The population in 1905 was 60,300, a gain of 2,075 since 1900. Over one-fifth of the population is foreign born. Germans represent considerably over one-half of the foreign element, with Danes second in number. Being one of the older counties in the state practically all of the land available for farm purposes has been placed under cultivation. In 1905 the total farm area was 252,548 acres, of which amount 178,640 acres were improved. The total value of such farms including improvements in 1905 was \$17,145,535, as compared with a valuation of \$11,100,528 in 1890. The surface of Winnebago county is generally rolling, although somewhat hilly in the western part. There are no very large or steep hills. The county roads as a rule have light grades. The soils of the county north of the Fox River and along the shore of Lake Winnebago are heavy red clayey loams derived from the red locustrine clays. The southern part of the county is a clayey loam of the lighter variety with a few small tracts of prairie loam. Small areas of humus soils are found in different parts of the county but are found mostly in the northern part.

The leading agricultural products and the acreage devoted to such in 1890 and 1905 were approximately as follows:

	Acreage in 1890.	Acreage in 1905.
Wheat	17,957	2,984
Oats	28,950	40,048
Barley	5,753	16,644
Corn	17,535	20,388
Hay	53,928	48,164

The dairy interests of this county are well advanced. In 1905 there were 38 cheese factories, 25 creameries and 4 skimming stations in the county. The unimproved acreage consists mostly of small tracts owned in connection with improved land. The price of such unimproved land averages about \$40. per acre. For improved land the price ranges from \$65. to \$100. per acre. Oshkosh is the county seat. The population of the cities, villages and towns of the county in 1905 was as follows:

WINNEBAGO COUNTY.

TOWNS, CITIES AND VILLAGES.	Families.	AGGREGATE POPULATION.			COLOR.			Ex-soldiers and sailors.	Militia.
		Male.	Female.	Total.	White.	Colored.	Indians.		
Algoma	188	444	432	876	876	.....	.....	8	145
Blackwolf	160	356	343	699	699	.....	.....	3	146
Clayton	241	610	533	1,143	1,143	.....	.....	9	214
Menasha	129	368	305	673	673	.....	.....	.....	121
Menasha, city:									
ward 1.....	344	834	825	1,659	1,659	.....	.....	.....	312
ward 2.....	235	724	708	1,432	1,432	.....	.....	.....	270
ward 3.....	206	450	480	930	930	.....	.....	.....	180
ward 4.....	368	926	1,013	1,939	1,939	.....	.....	.....	324
Total, city..5,960								29	
Neenah	122	351	266	617	617	.....	.....	2	148
Neenah, city:									
ward 1.....	386	879	983	1,862	1,858	*4	.....	.....	.....
ward 2.....	339	716	728	1,444	1,459	1	4	.....	.....
ward 3.....	468	1,028	1,172	2,200	2,200	.....	.....	.....	.....
ward 4.....	119	248	293	541	538	3	.....	.....	.....
Total, city..6,047								47	1,085
Nekimi	217	517	448	966	966	.....	.....	15	218
Nepeuskum	193	481	406	887	887	.....	.....	2	153
Omro	248	570	541	1,111	1,111	.....	.....	5	213
Omro, village	396	601	699	1,300	1,299	.....	1	69	159
Oshkosh	193	979	818	1,797	1,795	2	.....	7	229
Oshkosh, city:									
ward 1.....	348	758	765	1,523	1,522	*1	.....	9	387
ward 2.....	534	1,091	1,187	2,278	2,273	*5	.....	14	407
ward 3.....	377	751	854	1,605	1,605	.....	.....	8	207
ward 4.....	573	1,075	1,290	2,365	2,365	.....	.....	21	453
ward 5.....	626	1,315	1,591	2,906	2,903	3	.....	35	457
ward 6.....	562	1,480	1,332	2,812	2,812	.....	.....	8	545
ward 7.....	421	700	957	1,657	1,649	†8	.....	21	297
ward 8.....	472	1,065	1,051	2,116	2,111	5	.....	11	444
ward 9.....	478	1,033	1,099	2,132	2,132	.....	.....	17	441
ward 10.....	666	1,304	1,517	2,821	2,800	20	1	37	533
ward 11.....	419	914	991	1,905	1,902	3	.....	13	375
ward 12.....	525	1,215	1,215	2,430	2,425	5	.....	18	480
ward 13.....	795	2,013	2,012	4,025	4,024	1	.....	9	761
Total, city..30,575									
Poygan	139	365	321	686	636	.....	.....	11	133
Rushford	370	753	758	1,511	1,511	.....	.....	31	273
Utica	213	498	445	943	943	.....	.....	3	201
Vinland	191	535	472	1,007	1,007	.....	.....	6	192
Winchester	194	532	471	1,003	1,003	.....	.....	13	204
Winneconne	154	338	317	655	655	.....	.....	9	116
Winneconne, village	261	441	501	942	942	.....	.....	20	114
Wolf River	172	486	416	902	902	.....	.....	7	170
Total	13,102	29,744	30,556	60,300	60,233	61	6	516	11,107

*1 Chinaman.

†2 Chinamen.

EUREKA.

Eureka, Winnebago Co. Population, 300. An unincorporated village located on the Fox river, in Rushford township, 18 miles west of Oshkosh, the county seat, 4 miles west of Waukau on the C., M. & St. P. Ry., the shipping point, and 7 miles southwest of Omro, the nearest banking point. Stage daily to Berlin and Omro. Has telephone exchange.

The village has 1 drug store, 1 grocery, 2 hardware and 2 general stores, 1 hotel, 1 boarding house, graded school, Metho-

odist church, a physician, 2 blacksmith and wagon shops, harness shop, canning factory and a creamery. Better hotel facilities are needed.

Steam power is used. Wood and coal are used for fuel.

Wood is obtained from the adjacent country and coal from any of the railway towns. Peas, beans, corn and tomatoes are supplied for canning, and there is plenty of clay, sand and stone. Good glass sand within 2 miles. Help can be secured in the vicinity.

The village is in an excellent farming country, and 2-3 of the land suitable for crop raising is improved. The land is mostly level and free from stone with a small per cent. swampy and sandy.

MENASHA.

Menasha, Winnebago Co. Population, 5,960. An incorporated city located on the C., M. & St. P., the C. & N. W. and the W. C. Rys., and on the Fox river, in the northeast corner of the county, 13 miles from Oshkosh, 93 miles from Milwaukee, 43 miles from Manitowoc and 178 miles from Chicago. American, U. S. and National Express. Western Union and Postal telegraph. Telephone exchange.

The city was first settled in 1848 and incorporated as a city in 1874. Has an abundance of shade trees, a public park of 30 acres near the center of the city, a public library costing \$40,000, a high school building costing \$80,000, 2 ward schools, city hall, electric light and water plant, 7 churches, 2 banks, 2 drug stores, 3 hotels, 4 physicians, 4 lawyers, 50 teachers employed in the schools, fire department, 2 weekly and 1 daily newspaper. The more important manufacturing industries are 5 paper mills, a planing mill, 2 machine shops, 2 knitting factories, pulley factory, excelsior factory, saw-mill, sash, door and blind factory and the largest woodenware manufactory in the world. Lake Winnebago is a favorite summer resort for pleasure seekers. Within the city limits and on the north shore of the lake is a summer resort with a large hotel and fine bathing beach. An electric railway connects the city with Neenah, Appleton and Oshkosh.

Good location for a first-class dry goods or department store.

The water power not utilized is estimated at 3,000 H. P. Coal for fuel is obtained from Green Bay and Manitowoc. Fruit, vegetables and fish can be furnished for canning and the city can be supplied with clay, sand, peat, timber and stone. A large amount of help can be secured in the city.

The land surrounding the city is good for farming and about 60 per cent of it is improved.

NEENAH.

Neenah, Winnebago Co. Population, 6,047. Is an incorporated city and popular summer resort, on the W. C., the C. & N. W., and the C., M. & St. P. Rys., and on the Fox river, at the outlet of Lake Winnebago, in the northern part of the county, 13 miles from Oshkosh, the county seat, 6 miles from Appleton, 78 miles from Milwaukee and 183 miles from Chicago. American, U. S., and National Express companies. Western Union and Postal telegraph. Telephone exchange. First class shipping facilities and passenger service.

An electric railway connects this city with Menasha, Oshkosh and Appleton. Has paved streets well shaded, a beautiful nature park, many elegant residences, substantial business blocks, a \$60,000 city hall, a \$30,000 library, an opera house, 2 banks, 3 drug stores, 14 grocery stores, 3 hardware and 4 dry goods stores, a full complement of shops, 4 hotels, 4 boarding houses, a high and 4 ward schools, churches of the Baptist, Episcopal, Methodist, Presbyterian and Universalist denominations, 9 physicians and 7 lawyers. One weekly and 2 daily newspapers are published. The manufacturing industries comprise paper mills, stove works, brewery, kettle foundry, machine shops, boot and shoe factory, flour mills, sewer pipe and brick works, planing mill, extract factory, pump factory and cigar factories. A first-class hotel is needed.

There is plenty of water power not yet utilized. Fruit and vegetables can be supplied for canning purposes. Clay, sand and stone are the natural products. Plenty of help can be large flour mill. There is one small mill here at present but a large flour mill. There is one small mill here at present but a large mill is needed. A good location for a furniture factory, and a clothing factory.

The surrounding country is a first-class farming section and all of the land is improved. 90 per cent. of the land is level and free from stone; soil very rich and productive.

OMRO.

Omro, Winnebago Co. Population, 1,300. An incorporated village located on both sides of the Fox river, a navigable stream, and on the C., M. & St. P. Ry., 10 miles west of Oshkosh, the county seat, 90 miles from Milwaukee and 175 miles from Chicago. United States Express. Western Union telegraph. Telephone. Fair shipping facilities and passenger service.

The village is connected with Oshkosh by electric railway, and by boats on the Fox river in the open season. Has electric

light and power plant, 1 bank, 2 drug stores, 4 grocery, 2 hardware and 2 general stores, 1 hotel, high and graded public schools employing 8 teachers, a manual training school, Baptist, Catholic, Episcopal, Methodist Episcopal and Presbyterian churches, 4 physicians, 1 lawyer, an opera house, city hall, grain elevator, laundry, saw mill, planing mill and feed mill, and two weekly newspapers. A first-class hotel is badly needed.

Steam power is used. Coal and wood are used for fuel. Wood is obtained from the adjacent country and coal from Milwaukee. Fruit and vegetables can be supplied for canning. Clay, sand, stone and timber are the natural products. Plenty of help can be secured in the village. This is a good location for a good grist mill.

The village is surrounded by a fine farming country and 9-10 of the land is improved. The soil is very fertile and the land is nearly all level and free from stone.

OSHKOSH.

Oshkosh, Winnebago Co. Population, 30,575. 131 miles from Milwaukee and 103 miles from Madison. C. & N. W., C., M. & St. P., and Wis. Central Rys. The Fox river being navigable from Green Bay to Lake Winnebago, on which Oshkosh is situated, gives this city transportation facilities to the great lakes. Electric lines connect the city with Fox river valley cities to the north, Omro on the west and Fond du Lac to the south. Electric street railway. Gas and electric light plants. Waterworks. Telephone system. Western Union and Postal telegraph American, National, Pacific and United States Express. County seat.

Located at the mouth of the Fox river on Lake Winnebago, Oshkosh has for many years been the center of the Wisconsin lumber industry. The great forests of the state are within easy access of the city and wood working industries have grown rapidly. Oshkosh manufactures more sash, doors and blinds than any other city in the world. In addition to the above industry there are boiler works, shingle and saw mills, and wood working machinery shops, pump factories, and plants for the manufacture of yachts, automobiles, gas engines, furniture, trunks and glass. In 1905 Oshkosh had 135 factories with an aggregate capitalization of \$8,312,335, employing 4,863 wage-earners and having a total product of \$8,796,705. This city is also an important wholesale center and now has wholesale houses selling groceries, paper and notions, boots, shoes and rubber goods, leather and findings, spices, sporting goods and is the distributing point for packing house products.

Clay, sand, stone and timber can be obtained in abundance. There are 2 unoccupied factories, one of 70,000 square feet floor-space formerly used for a furniture factory and a large plant formerly used for the manufacture of grass twine and matting. Additional factory laborers can be secured from the surrounding country. Oshkosh has 55 physicians and 34 lawyers. 130 teachers are employed in the public schools. Three daily and two weekly newspapers are published. A state normal school is located here. The city is an important summer resort and is one of the most popular yachting centers in the northwest. The Oshkosh Board of Trade is a strong civic and commercial organization.

WAUKAU.

Waukau, Winnebago Co. Population, 290. An unincorporated village on the C. M. & St. P. Ry., 12 miles southwest of Oshkosh, the county seat, and 4 miles from Omro, the nearest banking point, 95 miles from Milwaukee and 180 miles from Chicago. United States Express. Western Union telegraph. Telephone. Fair shipping facilities and passenger service.

The village has 1 grocery and 2 general stores, 1 hotel graded school of 2 departments, 1 physician, grain elevator and a coal yard.

Steam power would have to be used here for manufacturing purposes. Coal and wood are used for fuel. Some help can be secured in the village. Good location for small manufacturing industries.

The surrounding country is level and free from stone and all the land suitable for crop raising is improved.

WINNEBAGO.

Winnebago, Winnebago Co. Population, 950. An incorporated village on the C. & N. W. and W. C. Rys., 4 miles north of Oshkosh, the county seat and banking point. American and National Express. Western Union telegraph. Telephone. Good shipping facilities and passenger service.

The village is the location of the State Northern Hospital for the Insane and the County Insane Hospital. Has well shaded streets, electric light plant, electric railway connections, 1 drug store, 1 grocery, 1 hardware store, 1 hotel, 2 boarding houses, graded school employing 2 teachers, 4 physicians, no factories, 1 blacksmith shop.

Better hotel facilities are needed. Coal for fuel is obtained from Oshkosh and Milwaukee. Steam power is used. Fruit,

vegetables and fish can be supplied for canning. Some help can be secured in the village. The village is a good location for any kind of manufacturing industries.

All of the adjoining land is suitable for farming and 90 per cent most any kind of manufacturing industries.

WINNECONNE.

Winneconne, Winnebago Co. Population, 950. An incorporated village and favorite summer resort, located on Wolf river and on the northern division of the C., M. & St. P. Ry., 13 miles northwest of Oshkosh, 105 miles from Milwaukee and 190 miles from Chicago. United States Express. W. U. telegraph. Telephone. Fairly good shipping facilities and passenger service.

The village is well located, has wide streets, plenty of shade trees, a small public park, a bank, 1 drug store, 1 grocery, 2 hardware and 3 general stores, 4 shoe stores, 1 small hotel, 1 boarding house, a good high school employing 12 teachers, Baptist, Catholic, German and Norwegian Lutheran, Methodist and Presbyterian churches, 2 physicians, a number of shops, canning factory, grist mill, gasoline engine factory, wagon shop and a boat factory and a creamery. A weekly newspaper is published. The village is in need of a first-class hotel.

There is a water power on the Wolf river not utilized. Wood is the principal fuel used obtained in the vicinity. Fruit, vegetables, fish and corn are supplied for canning. Clay, sand and stone are the natural products. This is a good location for a box factory and cold storage plant. Plenty of help can be secured here.

The surrounding country is good for farming and is all improved. The soil is a rich black loam and is level and free from stone.

WOOD COUNTY.

Wood county is located in the central part of the state. The area is 785 square miles. The population in 1905 was 30,380, a gain of 4,515 over 1900. Over one fifth of the population is of foreign birth, of which number Germans constitute considerably over one half. In 1905 the farm area was 265,028 acres, of which 97,596 acres were improved land, or less than 20% of the land in the county. The value of these farms in 1905 including improvements was \$8,629,861 as against \$2,691,584 in 1890. The surface is mainly rolling although

broken in a few places by ridges and hills. Wood county possesses diversified soils. The southern and eastern parts are level and sandy, very broad in area and associated with large marshes and peaty tracts. The soil is coarse and porous and can only be made very productive where there is sufficient clay or where the ground water is near. In general, this condition holds true for a large part of the area, but these soils are better adapted to cultivation along special lines than general farming. Stretching across the south central part of the county to Grand Rapids is a belt of sandy loam containing a few small tracts of sand and clay. These soils are lighter than the loamy clay in the north-western part but heavier than the sandy soils to the east. The surface here is gently rolling with occasional hills of sandstone or knolls of granite. The timber of this region was pine, oak, maple and basswood. North of this sandy loam extending into Marathon, Clark and Taylor counties the soils are a loamy clay with a rolling and well drained surface. Swamps are nowhere found in this area. The forest trees of this region are mainly hardwood and hemlock. This is strong land, very productive and durable, and has been pronounced as the equal of the best soils in the state. The leading crops of this county and the acreage devoted to each in 1890 and 1905 are as follows:

	Acreage in 1890.	Acreage in 1905.
Potatoes	1,560	3,350
Corn	1,841	4,479
Oats	6,245	14,713
Rye	3,023	5,303
Hay	23,842	36,139

Potatoes and rye are the leading export crops. There are 15 cheese factories and 20 creameries in the county. The marshes in the southern part of the county are among the wealthiest of cranberry districts, there being 754 acres devoted to cranberry culture in 1905. The price of unimproved land ranges from \$5 to \$30 per acre and for improved land the prices ranges from \$20 to \$75 per acre according to quality of soil, timber and nearness to markets. Grand Rapids is the county seat. The following table shows the population statistics for the local political divisions in 1905:

WOOD COUNTY.

TOWNS, CITIES AND VILLAGES.	Families.	AGGREGATE POPULATION.			COLOR.			Ex-soldiers and sailors.	Militia.
		Male.	Female.	Total.	White.	Colored.	Indian.		
Arpin	158	42	352	772	772			3	141
Auburndale	177	570	508	1,078	1,078				170
Auburndale, village ..	56	137	136	273	273			1	52
Cary	43	102	94	196	196			1	34
Cameron	47	117	113	230	230			1	46
Cranmoor	25	72	59	131	131			1	28
Dexter	111	259	248	507	507		3	6	54
Grand Rapids	181	530	457	987	986	1		8	141
Grand Rapids, city:									
ward 1.....	143	353	352	705	705				
ward 2.....	199	406	504	910	910				
ward 3.....	135	344	332	676	676				
ward 4.....	170	411	414	825	825				
ward 5.....	170	457	440	897	897				
ward 6.....	144	422	391	813	813				
ward 7.....	121	591	311	702	702				
ward 8.....	108	341	288	629	629				
Total, city...6,157								59	1,131
Hansen	161	438	367	805	805			3	133
Hiles	28	73	66	139	139				22
Lincoln	228	635	587	1,222	1,222			5	213
Marshfield	154	449	417	866	866			3	133
Marshfield, city:									
ward 1.....	257	667	734	1,401	1,401				
ward 2.....	98	249	247	496	495	1			
ward 3.....	131	551	547	1,098	1,094	4			
ward 4.....	256	594	599	1,193	1,193				
ward 5.....	278	575	628	1,203	1,202	1			
ward 6.....	124	325	319	644	644				
Total, city...6,035									
Milladore	205	568	554	1,122	1,122			36	1,104
Pittsville, city:								2	181
ward 1.....	170	130	162	292	292				
ward 2.....	27	70	72	142	142				
ward 3.....	27	51	61	112	112				
Total, city...546									
Port Edwards	159	460	367	857	857			11	76
Nekoosa, village	223	603	496	1,099	1,099			6	133
Port Edwards, village	89	194	189	383	383			6	223
Remington	121	307	263	570	570			6	117
Richfield	151	369	374	743	741	2		14	143
Rock	155	397	345	742	742			7	125
Rudolph	204	574	517	1,091	1,091			1	118
Saratoga	110	272	234	506	506			3	76
Seneca	71	224	204	428	428			1	59
Sherry	148	379	336	715	715			5	122
Sigel	258	826	771	1,597	1,597				223
Wood	113	288	295	583	583			5	115
Total	5,825	15,600	14,780	30,380	30,368	7	5	196	5,234



SCENE AT JEWISH COLONY AT ARPIN, WIS., ON WISCONSIN CENTRAL RAILWAY.

AUBURNDALE.

Auburndale, Wood Co. Population, 275. An incorporated village located on the W. C. Ry., in the northern part of the county, 25 miles northwest of Grand Rapids, the county seat, and 9 miles southeast of Marshfield, the nearest bank location. National Express. Telegraph. Good shipping facilities and passenger service.

Has 3 general stores, a hotel, 2 boarding houses, a graded public school employing 3 teachers, Catholic, Lutheran and Presbyterian churches, a physician, creamery, cheese factory, 2 saw mills and a planing mill.

Steam power is used. Wood is used for fuel obtained from the surrounding country. Vegetables can be supplied for canning. Good location for a pickle salting station. Some help can be secured in the village.

About 60 per cent of the land adjacent to the village, suitable for crop raising is improved. The lands is level, a small per cent stony and some swamps.

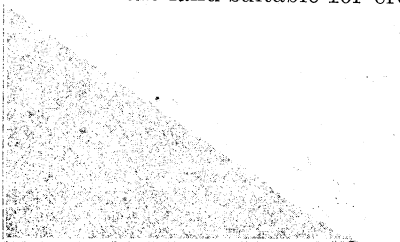
BABCOCK.

Babcock, Wood Co. Population, 300. An unincorporated village located on the C., M. & St. P. Ry., in the southwestern part of the county, 17 miles from Grand Rapids, 112 miles from Madison and 168 miles from Milwaukee. United States Express. Telegraph and telephone. Good shipping facilities and passenger service.

Has 2 general stores, 2 hardware stores, 3 hotels, 3 boarding houses, graded public school employing 3 teachers, Catholic, Lutheran and Methodist churches, a physician and lawyer.

There is an undeveloped water power. Wood is used for fuel obtained from the surrounding country. Vegetables can be furnished for canning. Clay, sand, peat and timber are the natural products. Good location for a cheese factory, pickle salting station and grist mill. Plenty of help can be secured here.

A large per cent of the land surrounding the village is marshy which will be drained and utilized for farming purposes. About 50 per cent of the land suitable for crop raising is improved.



DEXTERVILLE.

Dexterville, Wood Co. Population, 250. An unincorporated village, located at the junction of the G. B. & W. and the C., M. & St. P. Rys., and on Yellow river, 14 miles west of Grand Rapids, the county seat and nearest banking point, 28 miles from Marshfield, and 190 miles from Milwaukee. Western and United States Express. Telegraph and telephone facilities. Good shipping facilities and passenger service.

The village is supplied with 1 general store, a hotel and a boarding house, and a public school of 2 departments.

Fruit and vegetables can be supplied for canning. There is an abundance of sand, timber and stone near the village. The timber is small suitable for cord wood, fence posts etc. Good location for a canning factory. A limited amount of help can be secured.

The land surrounding the village is good for farming and about 75 per cent of the land suitable for crop raising is improved. The land is rolling with a sandy clay soil, well adapted to small fruit and vegetables.

GRAND RAPIDS.

Grand Rapids, Wood Co. Population, 6,157. An incorporated city, located on the C., M. & St. P., the C. & N. W., the G. B. & W. and the W. C. Rys., and on the Wisconsin river, in the southeastern part of Wood county of which it is the county seat, 87 miles from Green Bay, 207 miles from St. Paul, 160 miles from Milwaukee and 245 miles from Chicago. American and United States Express. Western Union telegraph. Local telephone exchange. Extra good shipping facilities and passenger service.

This city and Centralia on the opposite side of the river are both consolidated and are connected by foot and wagon bridge and two railroad bridges. Has two fire companies, one on each side of the river, and the entire city is covered with water works system. The city is lighted by electricity, has 3 banking houses, 6 hotels, excellent educational advantages, Catholic, Congregational, Episcopal, Lutheran, Methodist and Moravian churches, free public library, opera house, city hall, and good county buildings. The Wisconsin river furnishes water power for a number of paper mills tributary to the city, and numerous industries are situated within the city limits, comprising a hub and spoke factory, furniture factory, pulp mill, table factory, saw mill, wagon factory, pickle salting station, large flour mills, foundry and machine shop, candy factory etc. Three weekly newspapers are published.

There is a large water power not utilized. Fruit, vegetables, corn, beans and peas can be supplied for canning. Red

clay, kaolin, granite, sand and stone are the natural products. Help can be secured to work the entire year. No idle factories or workshops, and no failures have occurred in the city.

A first class hotel is needed. There are openings here for knitting and woolen mills, veneer works, casket factory, canning factory and fur factory. There is also an opening here for anyone desiring to enter the grocery business.

About 40 per cent of the land adjacent to the city, suitable for crop raising is improved. The land is level and free from stone, the soil is 40 per cent sandy, 10 per cent swamp and the remainder clay.

HEWITT.

Hewitt, Wood Co. Population, 175. A station on the Wisconsin Central Ry., in the northern part of the county, 4 miles from Marshfield, the nearest banking point, and 30 miles from Grand Rapids, the county seat. National Express. Telegraph and telephone. Shipping facilities and passenger service good.

Has 2 general stores, graded public school, Catholic and Lutheran churches, a parochial school, saw mill and shingle mill.

Wood is used for fuel, obtained from the adjacent country. Fruit and vegetables can be supplied for canning. A limited amount of help can be secured in the vicinity. The country surrounding the village is good for farming and about 60% of the farm land is improved. About 10% is stony, 10% swampy and the remainder level and free from stone.

MARSHFIELD.

Marshfield, Wood Co. Population, 6,035. An incorporated city located on the C. & N. W., the C., St. P., M. & O., and W. C. Rys., in the northwestern part of the county, 25 miles from Grand Rapids, the county seat, 132 miles from St. Paul, 155 miles from Ashland, 185 miles from Milwaukee and 270 miles from Chicago. American and National Express. W. U. telegraph. Telephone exchange. The very best shipping facilities and passenger service.

The city has good streets and good walks, fine shade trees in residence portion, a public park, is lighted by electricity, has an excellent system of water works and a well equipped and efficient fire department, 2 banks, a good supply of substantial mercantile establishments, 2 laundries, 5 hotels, good high and ward schools, Catholic, Episcopal, German Evangelical, Lutheran Methodist and Presbyterian churches, Catholic and Lutheran parochial schools, a public library, a hospital and water cure. The manufacturing industries include a box factory, boiler factory, cigar factory, bedding factory, brewery, foundry, stave and

heading mill, flour mill and veneer works. Three weekly newspapers are published.

Steam power will have to be used. Wood is used for fuel, obtained from the surrounding country. Fruit and vegetables can be furnished for canning, and the city can be supplied with clay and timber. The city is a good location for woodworking factories. Plenty of help here.

The city is surrounded by a good farming country and about 2-3 of the land, suitable for crop raising, is improved. The soil is a rich black loam, no swamps or sand, all level and free from stone. Dairying and stock raising are the chief industries. Grain, live stock and manufactured articles constitute the shipments.

MILLADORE.

Milladore, Wood Co. Population, 200. An unincorporated village on the W. C. Ry., 19 miles north of Grand Rapids, the county seat, and 15 miles from Stevens Point, the nearest banking point, 16 miles from Marshfield, and 170 miles from Milwaukee. Telegraph and telephone. Good passenger service and shipping facilities. National Express company.

The village has 2 groceries, 1 hardware and 2 general stores, shoe store and harness shop, 1 hotel, graded school employing 3 teachers, a physician, Catholic and Methodist churches, stave mill, planing mill, saw mill and shingle mill. A good hotel is needed.

Steam power is used. Wood is used for fuel, obtained from the surrounding country. The only raw materials for canning are vegetables. Clay and sand are the natural products, the clay being suitable for manufacturing bricks. The amount of help here is limited.

The adjacent country is all good for farming and about 1-8 of the land, suitable for crop raising, is improved. Cheap fuel and a rapidly developing country makes this a good location for a grist mill.

NEKOOSA.

Nekoosa, Wood Co. Population, 1,100. An incorporated village on the C., M. & St. P., the C. & N. W., and the W. C. Rys., and on the Wisconsin river, 8½ miles south of Grand Rapids, the county seat and banking point, 33 miles from Marshfield, 180 miles from Milwaukee and 265 miles from Chicago. American and United States Express. Telegraph and telephone. Good shipping facilities and passenger service.

The village was founded by the Nekoosa Paper Co., has a drug store, 5 groceries, 1 hardware and 2 general stores, 2 hotels, 16 boarding houses, graded public schools employing 8 teachers, Catholic, Congregational and Lutheran churches, 1 physician, 1 lawyer, and a paper and pulp mill. Good location

for a pickle salting station. Wood and coal are used for fuel. Wood is obtained from the adjacent country. Vegetables are the only raw materials produced, and sand is the natural product.

Only a small portion of the surrounding country is good for farming. The soil is sandy but produces good crops of vegetables, potatoes and other root crops.

PITTSVILLE.

Pittsville, Wood Co. Population, 600. An incorporated village located on the C. M. & St. P. Ry., and on the Yellow river, 18 miles northwest of Grand Rapids, the county seat, 23 miles from Marshfield, and 195 miles from Milwaukee. United States Express. Telegraph and telephone. Freight facilities and passenger service fair.

The city has graded streets, plenty of water, a bank, drug store, 4 groceries, 2 hardware and 2 general stores, 2 hotels, a boarding house, high school employing 6 teachers, Catholic, Congregational, Lutheran and Methodist churches, furniture store, saw and planing mill, grist mill, cigar factory, cabbage warehouse and a creamery. A weekly newspaper is published. Steam power is used. Wood for fuel is abundant in the surrounding country. Berries and all kinds of vegetables can be furnished for canning and cucumbers for pickling. This is a splendid location for a pickle salting station. Brick and tile clay, sand and building stone, and a limited amount of hardwood timber are the natural products. Good location for a potato warehouse and brick yard. Help can be secured here.

The surrounding country is all good for farming and not over 1-3 of the land is improved. Dairying is fast becoming the chief industry. Farm produce, lumber and wood are shipped.

RUDOLPH.

Rudolph, Wood Co. Population, 350. An unincorporated village on the C., M. & St. P. Ry., in the eastern part of the county, 7 miles northeast of Grand Rapids, the county seat and banking point. United States Express. Western Union telegraph. Good shipping facilities and passenger service.

Has 2 general stores, a hotel, public school, Catholic and Lutheran churches, a physician, a feed mill and a creamery. A bank is needed.

Steam power is used. Wood is used for fuel, obtained from the surrounding country. Plenty of help can be secured in the village and surrounding country.

The adjacent country is good for farming and about 2-3 of the land, suitable for crop raising, is improved. About 65% of the country is level and free from stone.

VESPER.

Vesper, Wood Co. Population, 200. An unincorporated village on the C. M. & St. P., the C. & N. W., and the W. C. Rys., 10 miles northwest of Grand Rapids, the county seat and banking point, 17 miles from Marshfield and 93 miles to Chippewa Falls. American and United States Express. Telegraph and telephone. Good shipping facilities and passenger service.

The village has 1 hardware and 2 general stores, 2 hotels, a boarding house, public school, a physician, a brick and tile factory, a feed and lath mill, saw mill and a creamery. The village needs a barber shop, boot and shoe store, harness shop and a jewelry store.

There is a small water power not utilized estimated at 100-horse power. Wood is used for fuel, obtained from nearby forests. Small fruits and vegetables can be supplied for canning. Brick, clay, sand, building stone and a limited amount of hardwood timber are the natural products. Help can be secured in the village and surrounding country.

About $\frac{1}{4}$ of the land surrounding the village, suitable for crop raising, is improved. The soil is adapted to vegetable growing and a cold storage building for cabbage is needed.

Recapitulation of the Different Industries Best Suited to the Various Cities and Villages of the State.

- Agricultural Implement and Vehicle Factory**—La Crosse, Bangor, Hurley, Wausau, North Freedom.
- Agricultural Implement Dealer**,—Van Dyne.
- Bakery**,—New Lisbon.
- Banks**,—William's Bay, Red Granite, Trempealeau, Rudolph, Star Lake, Birchwood, Lyons, Walworth, Dousman, Newton, North Prairie, Wilson, Footville.
- Barber**,—Germantown, Vesper.
- Basket Factory**,—Park Falls.
- Beet Sugar Factory**,—Barron, Prairie du Chien, Lancaster, Menomonie, Tomah, Sparta, Onalaska, Loyal, Clintonville, Viroqua.
- Blacksmith**,—Bancroft, Blueberry, Wentworth.
- Boarding House**,—Polar.
- Boat and Gasoline Engine Factory**,—Prescott, Woodruff.
- Boot and Shoe Factory**,—Vesper.
- Bottling Works**,—Onalaska.
- Box Factory**,—Downing, Bibon, Tomah, Park Falls, Winneconne, Schofield, Three Lakes, Clintonville, Rib Lake.
- Box Shook Factory**,—Edgar.
- Brick Yard**,—Loganville, Merrimac, Ironton, North Freedom, Ablemans, Shell Lake, Rib Lake, Medford, Bonduel, Cross Plains, Black River Falls, Hixon, Cato, Baldwin, Stanley, New Auburn, Dallas, Waupun, Hortonville, Bristol, Lake Mills, Johnson's Creek, Dunbar, Barneveld, Platteville, Wilton, Crandon, Prentice, Elmwood, Bay City, Weyerhauser, Clear Lake, Kewaskum, Pittsville, West Salem, Owen, Norrie.

Brown Factory,—Kendall.

Broom Handles,—Saxon, Heineman, Edgar, Unity.

Button Factory,—Prairie du Chien.

Canning Factory,—Cumberland, Eden, Brandon, Oakfield, Fairwater, Campbellsport, Gratiot, South Wayne, Shulsburg, Belmont, Blanchardville, Ridgeway, Avoca, Lancaster, Potosi, Blue River, Patchgrove, Fennimore, Boscobel, Muscoda, Cedar Falls, Downing, Elk Mound, Ridge Land, Menomonie, Forest Jct., Brillion, Bayfield, Valley Jct., Kendall, Wilton, Tomah, Sparta, Warrens, Park Elm, Maiden Rock, Bay City, Spring Valley, River Falls, Arkansaw, Cedar Lake, Amery, St. Lawrence, Jackson, Wautoma, Plainfield, Independence, Whitehall, Trempealeau, Galesville, Dexterville, Vesper, Grand Rapids, Montello, Oxford, Packwaukee, Westfield, Bangor, West Salem, Saxon, Albany, Brodhead, Granton, Colby, Abbotsford, Thorpe, Neillsville, Wausau, Spencer, Waupun, Brule, Egg Harbor, Bailey's Harbor, Ephraim, Jacksonport, Augusta, Fall Creek, Altoona, Fairchild, Shiocton, Hortonville, Somers, Palmyra, Rome, Wonewoc, Manston, Camp Douglas, Elroy, New Lisbon, Crivitz, Coleman, McMillan, Unity, Grafton, Sobieski, Lena, Suring, Spring Green, Loganville, Merrimac, Ironton, North Freedom, Darien, Fontana, Genoa Jct., Lyons, Springfield, Walworth, Whitewater, Clintonville, Iola, Marion, Rib Lake, Medford, Excelsior, Richland Center, Viola, Hillsboro, La Farge, Ontario, Viroqua, Fox Lake, Lomira, Mayville, Neosho, Theresa, Waupun, Waunakee, Black River Falls, Merrilan, Berlin, Greenleaf, Wrightstown, Cato, Kiel, Mishicott, Reedsville, Almond, Amherst, Bancroft, Plover, Elkhart, Random Lake, Waldo, Brookfield, Dousman, Hartland, Lannon, Menomonie Falls, Merton, North Prairie, Pewaukee, Baldwin, Hammond, New Richmond, Woodville, Edgerton, Footville, Milton Jct., Shopiere, Bloomer, New Auburn, Cadott, Wyocena, Columbus, Mondovi, Fountain City, Nelson, Gay's Mills Wauzeka, Soldiers Grove, Prairie du Chien, Poynette, Lodi, Kilbourn City, Prairie Farm, Chetek, Turtle Lake, Dallas.

Casket Factory,—Grand Rapids.

Cement Block Factory,—Prairie du Chien, Hortonville, Whitefish Bay, Prairie du Sac, Madison.

- Cement Factory**,—New London, Waupaca, Weyauwega, Glen Beulan, North Prairie, Darien, Monroe.
- Chair Factory**,—Merrill.
- Charcoal Establishment**,—Port Wing, Ingram.
- Cheese Box Factory**,—St. Cloud, Dale, Woodland.
- Cheese Factory**,—Randolph, Mt. Sterling, Bridgeport, Cataract, Catawba, Babcock, Amherst, Woodville.
- Cigar Factory**,—New Lisbon, Whitehall, Westby, Milton Jct.
- Clothes Pin Factory**,—Edgar.
- Clothing Factory**,—Neenah.
- Coal, Salt and Lime Dealer**,—Hanover, Helenville, Medina.
- Cold Storage**,—Eden, Menomonie, Forest Jct., Winneconne, Monroe, Baraboo, Alma, Pewaukee.
- Condensed Milk Factory**,—Hortonville, Pleasant Prairie, Palmyra, Darlington, Clear Lake, St. Lawrence, New Glarus, Fontana, Sharon, Manawa, Belleville.
- Creamery**,—Highbridge, Randolph, Mt. Sterling, Bridgeport, Stevenson's Pier, Pleasant Prairie, Casco, Bayfield, Readstown, Brule.
- Department Store**,—Menasha.
- Drug Store**,—Casco, Centuria, West Allis, William's Bay, Dousman, Footville, Cottage Grove, Red Granite.
- Dry Goods Store**,—Cecil.
- Electric Light Plant**,—Trempealeau, Humbird, Grafton, Woodruff, Viola, Lomira, Cambridge, Dartford, Marksau, Wrightstown.
- Elevator**,—Casco.
- Excelsior Factory**,—Wauzeka, Port Wayne, Wabeno, St. Croix, Owen, Edgar, Gillett.
- Feed Mill**,—Westby.
- Feed Store**,—Blueberry.
- Foundry**,—Barron, Cassville, Spring Valley, Cedarburg.
- Foundry and Machine Shop**,—Park Falls, Hurley, Saxon.
- Fur Coats**,—Markesan.
- Fur Factory**,—Grand Rapids.
- Furniture Factory**,—Stanley, Chetek, Solon Springs, Augusta, Necedah, Pound, Peshtigo, Algoma, Bibon, Catawba, Park Falls, Durand, Centuria, Neenah, West Salem, Onalaska, Saxon, Heineman, Merrill, Athens, Richland Center, La Farge, Bryant, Koepenic.
- Furniture Store**,—Green Leaf.
- Gas Plant**,—Waupun.

- General Store**,—Steuben, Patch Grove, Balsam Lake, Morrisonville, Marathon City, Hanover, Red Granite, Stiles Jct., Helenville, Kimberly, Union Center, London, Bancroft, Granville, Eland Jct., Kewaskum, Sullivan.
- Glass Factory**,—Hixon.
- Glove and Mitten Factory**,—Bloomer, Brandon, Markesan, Princeton.
- Grist and Flouring Mill**,—Steuben, Turtle Lake, Egg Harbor, Stevenson's Pier, Hilbert, North Crandon, Prescott, St. Croix, Omro, Babcock, Milladore, Germania, Abbotsford, Sobieski, Rhinelander, Medford, Clyman, Phlox.
- Grocery Store**,—West Allis, Grand Rapids.
- Hardware Store**,—Green Leaf, William's Bay, Van Dyne, Blueberry.
- Harness and Shoe Shop**,—Ridgeland, Germantown, Vesper, Green Leaf.
- Hose Factory**,—Princeton.
- Hotels**,—Glidden, Cadott, Wyocena, Columbus, Randolph, Nelson, Gay's Mills, Soldiers Grove, Steuben, Prairie du Chien, Fall River, Poynette, Pardeeville, Fond du Lac, Solon Springs, Poplar, Lake Nebagamon, Bailey's Harbor, Detroit Harbor, Jacksonport, Germantown, Neenah, Eureka, Blair, Trempealeau, Milladore, Neshkoro, Oxford, Packwaukee, West Salem, Onalaska, Humbird, Mosinee, Lena, Woodruff, Darien, Fremont, Royalton, Cazenovia, Beaver Dam, Danville, Theresa, Cambridge, Madison, Greenleaf, Arnott, Stevens Point, Cedar Grove, Elkhart, Duplainville, Waukesha, Deer Park, New Richmond, Somerset, Bristol, Palmyra, Coleman, Darlington, Benton, South Wayne, Mifflin, Platteville, Elkmound, Stockbridge, Hilbert, Norwalk, Warrens, Elmwood, Weyerhauser, Glenflora, Frederick, Luck, St. Croix Falls, Osceola, Amery, Germantown, Mercer, Brule.
- Hub and Spoke Factory**,—Owen, Rib Lake, Phlox.
- Iron Works**,—Ashland, Superior.
- Jeweler**,—Vesper, Green Leaf, Livingston, Cottage Grove.
- Knitting Mill**,—Grand Rapids, La Farge.
- Laundry**,—Whitehall, Trempealeau, Rib Lake, Westby, Mt. Horeb, Princeton, Green Leaf, Hartland, Grantsburg.
- Lead and Zinc Smelting**,—Shullsburg, Platteville.
- Lime Kiln**,—Waupun, Dale, Bay City, Cross Plains.
- Livery Stable**,—Germantown.

- Live Stock Buyer**,—Rockland, Eldorado.
- Lumber Yard**,—Hanover, Helenville, Rockland, Casco, Walworth, Viola.
- Machine Shop**,—Barron.
- Malt Plant**,—Adel.
- Manufacturing Industry of any Kind**,—Superior, Madison, Milwaukee, South Milwaukee, Cudahy, Janesville, Apollonia, Balsam, Luke, West Bend, Winnebago, Waukau, Ashland, Wausau, La Crosse, Eau Claire, Chippewa Falls, Janesville, Madison, Oshkosh, Green Bay, Marinette, Manitowoc, Sheboygan, Racine, Kenosha, Two Rivers, Fond du Lac, Oconto, Port Washington, Rhineland.
- Meat Market**,—Oxford, West Allis.
- Metalic Zinc Works**,—Mineral Point.
- Overall Factory**,—Prairie du Chien, Lancaster.
- Packinghouse**,—Durand.
- Painter**,—Germantown.
- Paint Factory**,—North Freedom.
- Paper and Pulp Mill**,—Bibon, Eagle River, Birchwood.
- Paper Box Factory**,—Gile.
- Paper Mill**,—Kilbourn City, Chetek, St. Croix, Schofield.
- Peat Establishment**,—Lake Mills.
- Photograph Gallery**,—Greenleaf.
- Pickle Factory**,—Hortonville, Plainfield, Galesville, Neills-Merillan, Eagle, Hartland.
- Pickle Salting Station**,—Wanakee, Plover, Waldo, Bloomer, Camp Douglas, New Lisbon, Crivitz, Valley Jct., Arkansas, Wautoma, Poysippi, Babcock, Nekoosa, Auburndale, Humbird, Grafton, Ablemans, Fontana, Genoa, Sharon, Springfield, Whitewater, Iola, Readstown, Theresa.
- Planing Mill**,—Casco, Whitehall, Walworth, Mt. Horeb.
- Potato Buyer**,—Wautoma, Red Granite.
- Potato Warehouse**,—Pittsville.
- Pottery**,—Hollendale, Cedar Falls.
- Pulp Mill**,—North Crandon, Ingram, Knowlton, Marathon.
- Sand Brick Factory**,—Camp Douglas.
- Sanitarium**,—Baraboo.
- Sash and Door Factory**,—Cassville, St. Croix Falls, Shell Lake, Mt. Horeb.

- Saw Mill**,—Sanborn, Lake Nebagamon, Florence, Hatley.
- Shoe Factory**,—Bloomer, Chippewa Falls, Lodi, Rice Lake, Augusta, Waterloo, Wonewoc, St. Croix Falls, Bangor, Beaver Dam, Fox Lake, Belleville, North Hudson, Edgerton.
- Spindle Factory**,—Heineman.
- Starch Factory**,—Seymour, Mauston, Ridgeland, Tomah, Centuria, Galesville, Packwaukee, Shell Lake, Cazenovia, Beaver Dam, Almond.
- Stave and Heading Mill**,—Ridgeland, Catawba, Owen.
- Stone Crusher**,—Pewaukee.
- Stone Quarry**,—Maiden Rock.
- Stump Puller Factory**,—Barron.
- Sulphuric Acid Factory**,—Platteville.
- Summer Hotel**,—Kilbourn City, Chetek, Cumberland, Ephraim, Lake Geneva, Madison, Oconomowoc.
- Summer Resort**,—Neshkoro, Heafford.
- Tailor**,—Cottage Grove, Greenleaf.
- Tanbark Extract Establishment**,—Shanagolden.
- Tank Factory**,—Mt. Horeb.
- Tannery**,—Shanagolden, Oconto.
- Tile Factory**,—Monroe, Stanley, Dunbar, Platteville, Menomonie, Clear Lake, Kewaskum, Shell Lake, Baldwin.
- Tin Smith**,—Germantown.
- Tobacco and Cigar Factory**,—La Farge, Alma, Edgerton.
- Tobacco Buyer**,—Cottage Grove.
- Tobacco Warehouse**,—Wauzeka, Prairie du Chien, Lodi, New Lisbon, Fennimore, Muscoda, Blair, Cazenovia, La Farge, Baldwin.
- Tool Handle Factory**,—Wabeno, Heineman.
- Trunk Factory**,—
- Tub Factory**,—Downing.
- Veneer Factory**,—Wabeno, Catawba, St. Croix, Grand Rapids, Merrill, Rib Lake.
- Veterinary Surgeon**,—Washburn.
- Wagon Factory**,—Barron, Cassville, Bibon, Rib Lake.
- Wagon Shop**,—Merrimac.
- Wholesale Grocery**,—Sparta.
- Wholesale Mercantile Establishment**,—Madison.
- Woodenware Factory**,—Hawthorn, Fairchild, Eau Claire, Pound, Boscobel, Menomonie, Wilton, Florence, Ca-

tawba, Durand, Greenwood, Unity, Three Lakes, North Freedom, La Farge.

Woodworking Establishment,—Ashland, Superior, Glidden, Shanagolden, Butternut, Stanley, Boyd, Chippewa Falls, Haugen, Gay's Mills, Soldiers Grove, Prairie du Chien, Cumberland, Shiocton, Elroy, Pembine, Dunbar, Coleman, Wagoner, Kewaunee, Crandon, Prentice, Aniwa, Birnamwood, Eland, Tigerton, Wittenberg, Boaz, Excelsior, Hillsboro, Elton, De Pere, Ladysmith, Glenflora, Frederick, Luck, Marshfield, Tomahawk, Crivitz, Thorpe, Spencer, McMillan, Athens, Norrie, Oconto, Lena, Surging, Prairie du Sac, Hackley, Eagle River, Birchwood, Spooner, Manawa.

Woolen Mill,—Bloomer, Rice Lake, Gratiot, River Falls, Grand Rapids, West Salem, Manawa.

PLACES HAVING DESIRABLE FACTORY BUILDINGS
AVAILABLE FOR IMMEDIATE OCCUPANCY NOT
GIVEN ELSEWHERE.

Antigo, 2 buildings; Appleton, 3, together with 5 acres of land; Aniwa, 2; Baraboo, 1; Barton, 1; Campbellsport, 2; Eldorado, 1; Edgar, 1; Fond du Lac, 2; Green Bay, 1, with 72 acres of land; Hiles, a plant consisting of several buildings; Jefferson, 2; Janesville, 2; Kaukauna, several buildings located on water power; Kenosha, 3; Lindworm, 1; Lancaster, 1; Montfort, 1; Marinette, a manufacturing plant consisting of several buildings; Mercer, 1; Norrie, 1; New London, 1; Oshkosh, several buildings; Okee, 1 with water power; Racine, 2; Three Lakes, 2; Two Rivers, a vacant plant comprising several buildings; West Bend, 3; Watertown, 2.

Many of these factory buildings are fully equipped with machinery and all the modern conveniences.

WISCONSIN PRIZES DRAWN AT THE LOUISIANA
PURCHASE EXPOSITION HELD AT ST. LOUIS
IN 1904.

At the World's Fair held at St. Louis, Mo., in 1904, Wisconsin drew 20 grand prizes, 126 gold medals, 160 silver medals and 69 bronze medals, total 375 prizes, distributed as follows:

GRAND PRIZES.

Educational exhibits, 2; school apparatus, 2; program clock, 1; enameled cooking and household utensils, 1; ecclesiastical goods, 1; leather, 1; traveling cranes, 1; machine tools, 1; engines and threshing machines, 1; collection of farm and garden seeds, 1; special appliances for teaching dairying, 1; malts, 1; mineral water, 1; fruit, 1; forestry exhibit, 1; horses and live stock, 3—total, 20.

GOLD MEDALS.

School, college and other educational exhibits, 21; lithographic exhibits, 1; artificial limbs, 1; printing machines, 1; fountain pens, 1; dustless floor brush, 1; religious statuary, 1; thermostadt and humidostadt, 1; electric air brake and equipment, 1; alternating current generators, 1; electric equipment and control for cranes, hoists, and trolleys, 1; vehicle lamps, 1; air brake for electric cars, 1; barley, 8; beans, 12; buckwheat, 4; wheat, 18; collection of grains, 2; rye, 7; alfalfa, 1; millet, 1; oats, 7; popcorn, 1; timothy, 2; peas, 3; clover, 4; grasses, 1; potatoes, 1; seeds, 1; butter and cheese, 1; chedders, 1; counters and tallies for flour mills, 1; bottling machines, 1; malted milk, 1; flour, 1; beer, 2; mineral waters, 2; flax, 1; fruit, 1; orchids, 1; mineral resources, 1; building stones and clays, 1; mine models, 1—total, 126.

SILVER MEDALS.

School and college exhibits, 18; apparatus for determining rate of air flow through soil, 1; apparatus for illustrating instruction in drainage and irrigation, 1; chart illustrating feeding value of corn, 1; American School Board Journal, 1; artificial

blackboards, 1; altar pieces, 1; ecclesiastical statuary, 1; painted glass, 1; lubricators, 1; steam engines, 1; electric apparatus, 1; automobiles, 1; car ferry model, 1; wagons, 2; tobacco, 1; wheat, 12; barley, 8; beans, 4; rye, 4; peas, 2; buckwheat, 4; grasses, 2; grains, etc., 3; forage plants, 1; potatoes, 1; millet, 1; oats, 5; clover, 3; corn, 2; timothy, 1; lentils, 1; speltz, 1; ginseng roots, 1; creamery butter, 32; flax, 1; apples, 7; fruit, 4; plums, 3; cranberries, 1; grapes, 1; collection of insects injurious to plants, 1; lead ore, 1; granite columns, cubes, etc., 2; paving blocks and macadam, 1; mineral waters, 7; electric emery grinders, 1; mineral paints, 1; mineral resources, 1; views of Wisconsin scenery, 1; maps showing resources and water power, 1; cross section of Baraboo iron district, 1; photographs, charts, etc., 1—total, 160.

BRONZE MEDALS.

School exhibits, apparatus, etc., 4; parlor table, 1; church furniture, 2; fuel saver, 1; bed spread, 1; lace constructors, 1; horizontal steam separator, 1; electric apparatus, 1; automobile tires, 1; barley, 7; beans, 3; oats, 11; peas, 5; speltz, 2; emmer, 1; timothy, 1; corn, 4; buckwheat, 3; rye, 4; wheat, 12; grasses and forage plants, 1; popcorn, 1; sugar cane, 1; potatoes, 5; creamery butter, 4; beer, 1; flax, 1; apples, 6; cranberries, 1; crushed quartz and sand paper, 1; pottery, 1; mounted birds, 1—total, 69.

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Cumberland	442	Fennimore	562
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Dale	636	Fontana	811
Dallas	443	Footville	746
Danville	512	Forest Jct.	466
Darien	809	Fort Atkinson ..	593
Darlington	622	Fountain City ..	460
Dartford	575	Fox Lake	512
Dayton	571	Frederic	718
Deer Park	759	Fremont	833
De Forest	501	Friendship	430
Delafield	825		
Delavan	809	G	
De Pere	454	Galesville	793
Detroit Harbor ..	522	Gays Mills	493
Dexterville	853	Genoa Jct.	512
Dodgeville	581	Germania	662
Dousman	825	Germantown	320
Downing	534	Gile	586
Downsville	534	Gillett	684
Dunbar	656	Glen Beulah	782
Dup ainville	826	Glenflora	752
Durand	706	Glen Haven	563
E		Glidden	434
Eagle	826	Grafton	701
Eagle River	806	Grand Rapids ..	853
East Troy	810	Granton	480
Eau Claire	539	Grantsburg	463
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Montello	662	Pembine	659
Montfort	564	Peshigo	659
Montreal	588	Pewaukee	829
Morrisonville	506	Phillips	734
Mosinee	649	Phlox	630
Mt. Calvary	547	Pittsville	856
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Necedah	603	Poplar	528
Neenah	845	Portago	488
Neillsville	481	Port Washington	702
Nekoosa	855	Port Wing	450
Nelson	461	Potosi	567
Neosho	517	Pound	660
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New Auburn	474	Poynette	439
New Glarus	572	Poysippi	840
New Holstein	467	Prairie du Chien	494
New Lisbon	603	Prairie Farm	444
New London	835	Prentice	782
New Richmond	760	Prescott	711
Niagara	659	Preston	567
Norrie	649	Princeton	576
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North Freedom	768	R	
North Hudson	761	Racine	736
North Milwaukee	672	Randolph	490
Norwalk	678	Random Lake	783
		Reedsburg	770
O		Reedstown	801
Oakfield	550	Reedsville	641
Oconomowoc	828	Reesville	517
Oconto	685	Rewey	583
Oconto Falls	685	Rhineland	690
Ogdensburg	835	Rice Lake	445
Ogema	730	Richland Center	741
Omro	845	Rib Lake	790
Onalaska	616	Ridgeland	536
Ontario	800	Ridgeway	583
Oostberg	782	Rio	490
Osceola	719	Ripon	551
Oshkosh	845	River Falls	711
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PART VI.

MANUFACTURING RETURNS, 1904-1905

57—L.

MANUFACTURING RETURNS, 1904-1905.

INTRODUCTION.

The publication of the manufacturing returns for two successive years, after being interrupted by the fire of 1904, is resumed in this report. It is again possible therefore to make comparisons from year to year of the data submitted by a large proportion of the manufacturing establishments of the state, and to deduce therefrom reasonably accurate conclusions regarding the general trend of industrial conditions within the state, such as increase or decrease in the capital invested or in the wages paid in a particular industry, in the number of days workmen were given employment, in the number of male and of female employees, in the hours of labor, etc.

Effort has been made to present the greatest possible number of facts of interest relating to each industry. To this end a large number of tables has been prepared, making it possible to examine the data offered from many different points of view. This becomes clear from an examination of the plan of presenting the material.

Each of the 51 larger industries is first taken up separately, the statistics pertaining to the industry being arranged in eight tables. The data for the two years are always for identical establishments. Following the tables are appended a few remarks intended to throw further light upon the facts set forth in the tables themselves. Next follow a few tables in which the data relating to the entire 51 industries are summarized. Twelve "Minor Industries" are next treated similarly, but much more briefly than the 51 leading industries. Finally a few tables are presented which are concerned with certain establishments that reported for 1905, but not for 1904, and for

this reason could not be included among the establishments considered in the first tables.

Table I, designated as Management and Operation, contains statistics relating to the control of the various manufacturing plants engaged in the particular industry. The number of private firms and of corporations is given, as also the number of male and female partners in the former, and of male and female stockholders in the latter.—It should be stated that the number of stockholders of the various corporations is probably much greater in the case of several industries than the number presented in the table. This is due to the fact that several establishments declared their inability to ascertain the number of persons holding their stock—The smallest and the greatest number of persons employed in the industry in any month of each year, and the average number per month, together with the average number of days the plants were in operation, complete the table. Each of the tables is so arranged as readily to permit of comparisons between the data of 1904 and those of 1905.

Table II, Investment, shows the amount of capital invested in 1904 and in 1905, in land, buildings and fixtures, machinery, etc., and the cash capital employed; also the amount and percentage of increase or of decrease of each of these items.

Table III A presents the Value of Materials and Labor Employed, and of Product. Here are included the value of the raw and other material used, the wages and salaries paid, the amount realized as profit or devoted in part to minor expenses, and the sum total of the foregoing items, which total represents the value of the goods made and the work done each year. The amount and percentage of increase or decrease of each item is also shown.

Table III B is an Analysis of Table III A. In this table, the value of the goods made and the work done is considered the "gross product." From this is subtracted the value of the raw and other material used, leaving the "industry product." Of this amount, the sum paid as wages represents labor's direct share of the industry product. The proportion which this sum bears to the industry product is ascertained for each industry. By subtracting "Labor's share" from the industry product a sum is found which represents the "profit and minor expense fund." It should be noted that the so-called "minor expenses"

may be so considerable as to reduce the actual profit to a very low figure. Under this head are included such expenses as insurance, taxes, rentals, interest, heat, light, and power. There has been no intention on the part of the bureau to ascertain the exact or approximate profit in any industry. In this connection only the amount of the profit and minor expense fund, and the percentage which it bears to the industry product, are presented.

Table IV, Average Capital, etc., per Employee, gives the amount of capital invested and the average product, to each person employed, and the average yearly earnings of each. These sums are obtained by dividing respectively the total capital invested in the industry, the gross product, and the total wages, by the average number of persons employed each year. The amount and the percentage of increase or decrease for 1905 are also indicated.

Table V, Range of Employment and of Unemployment, presents first the number of persons employed in the industry each month of the two years, and the average number for each year. Then—for each year separately—considering the month in which the largest number of workmen were employed as the period of full employment, and the number employed in that month as 100%, the percentage which the number employed in each of the other months of the same year bears to this number is ascertained as the “percentage of employment” for these months. The difference between these percentages and 100% represents the “percentage of unemployment” for each of the months. The range of employment for any year is, then, from the lowest percentage of employment in any month of that year to 100%. In like manner, the range of unemployment for a year is from zero to the highest percentage of unemployment in that year. This percentage of unemployment must not however be interpreted to mean that the persons represented as unemployed for any month were actually idle. It means only that such a per cent. of the number which at one period of the year were employed in that industry, were not employed in it for that particular month. They may of course have had employment in some other industry. This is especially probable inasmuch as the dull season for various industries comes at very different times of the year, so that while one is finding it

advisable to let out some of its men, others are seeking additional help. The table is obviously of some value in showing the general course of business of an industry, as well as the varying opportunity of securing work in it at different seasons of the year.

Table VI, Occupations and Wages of Employees, is one of the most comprehensive presented in this report. Here the employees are classified according to occupation, female employees being so designated. For each occupation there is given the number of persons employed each year, the average hours of work per day, the average wages per day and per hour, and the percentage of increase or decrease in wages per day in 1905. Many important comparisons are thus made possible. For example, a question always of great interest is that regarding the extent of employment of female labor. From this table can be determined the various occupations at which women are now working; their hours of work as compared with those of men; the degree of skill usually required of the female employee; also which industries employ women for the more important and more technical portions of the work, as against those in which women are engaged in the lighter and only incidental occupations.

It should be noted that a different classification of employees in 1905, from that made in 1904, may cause an apparent increase or decrease in the wages of one of the occupations so affected. This is caused by a firm's reporting some of its employees under a different occupation from that reported the preceding year. The mistake is made most frequently in connection with the term Laborers. Thus, in some cases a firm has reported half of its employees as laborers one year, and the next year has given each employee his proper designation. It has of course been our intention to have this term restricted to the unskilled general laborer, as opposed to the workman having a definite occupation requiring technical skill.

It should be observed also that a decrease in wages per day for 1905 is sometimes accompanied by an increase in the wages per hour. The change in hours of work and in wages per hour should therefore be noted in each case in connection with the change in wages per day.

In Table VII, Classification of Daily Wages, employees are

grouped according to the daily wages received. Beginning with "33 cents or less per day,"—the equivalent of "less than \$2.00 per week,"—as the first class, the classes proceed, each class including wages either eight or nine cents per day higher than those of the preceding class—equivalent to a difference of 50 cents per week. Thus, the second class is "from 34 cents to 41 cents per day," equivalent approximately to "from \$2.00 to \$2.49 per week"; the third class, "from 42 cents to 49 cents per day," or from \$2.50 to \$2.99 per week. The average wages per day received by male, female, and total employes respectively, in each class are also given. These average wages have been computed not for purposes of comparison, but to show definitely the average wages received by those employees who have been included in each class. This word of caution seems necessary, since incorrect conclusions would be likely to follow from a comparison of these averages for any particular class, for the reason that employees are not necessarily included in the same class in successive years. A comparison of the total averages however affords results of great interest.

In regard to the tables as a whole it should be said that an effort has been made to word these so simply as to make clear the meaning of each with but little further explanation. In the observations following the set of tables for each industry there will therefore be omitted many of the conclusions easily deduced from the tables. Attention will be called only to those facts in the tables deserving of especial notice, or those likely to be misconstrued.

TABLES.

(For explanation of the tables see the Introduction.)

1. AGRICULTURAL IMPLEMENTS—26 ESTABLISHMENTS.

TABLE I—MANAGEMENT AND OPERATION.

Classification.	Number in		Increase, +, or decrease, —, in 1905.	
	1904	1905	Amount.	Per cent.
Number of private firms	6	6	—	—
Number of male partners	8	8	—	—
Number of female partners	—	1	+ 1	—
Total number of partners	8	9	+ 1	12.50
Number of corporations	20	20	—	—
Number of male stockholders	177	169	— 8	4.52
Number of female stockholders	56	57	+ 1	1.79
Total number of stockholders	233	226	— 7	3.00
Total numbers of partners and stockholders	241	235	— 6	2.49
Smallest number of persons employed	2319	2798	+ 479	20.66
Greatest number of persons employed	3174	3834	+ 660	20.79
Average number of persons employed	2694	3135	+ 441	16.37
Average days in operation	283	272	— 11	3.89

TABLE II—INVESTMENT.

Classification.	Capital invested in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent.
Land	\$906,287 42	\$663,650 95	+\$54,563 53	6.00
Building and fixtures	1,713,245 12	1,573,288 58	+257,043 46	15.00
Machinery, etc	1,713,980 80	1,791,479 15	+ 77,498 35	4.52
Cash and other capital	13,127,969 29	12,969,987 45	—157,981 84	1.20
Total	\$17,461,482 63	\$17,092,406 13	+\$230,923 50	1.32

TABLE IIIA—VALUE OF MATERIALS AND LABOR EMPLOYED, AND OF PRODUCT.

Classification.	Value of material used, wages and salaries paid in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent.
Raw material used	\$2,839,785 30	\$2,945,78 09	+ \$105,592 79	3.72
Other material used	323,058 29	359,688 88	+ 36,630 59	11.31
Wages	1,461,081 53	1,805,713 15	+ 342,631 62	23.42
Salaries	916,906 63	1,020,796 20	+ 103,889 57	11.33
Profit and minor expenses	3,725,000 56	4,412,493 02	+ 688,492 46	18.43
Goods made and work done	\$9,267,832 31	\$10,515,069 34	+\$1,277,257 03	13.78

TABLE III B--ANALYSIS OF TABLE III A.

Classification.	1904.	1905.
Value of goods made and work done (gross product).....	\$9,267,832 31	\$10,445,069 34
Value of stock used and other material consumed in production.....	3,162,843 59	3,205,066 97
Industry product (gross product less value of stock and material).....	6,104,988 72	7,240,002 37
Wages and salaries (Labor's direct share of product).....	2,379,988 16	2,826,509 35
Profit and minor expense fund (industry product less wages).....	3,725,000 56	4,413,493 02
	Per cent.	Per cent.
Percentage of industry product paid in wages.....	38.98	39.04
Percentage of industry product devoted to profit and minor expenses.....	61.02	60.96

TABLE IV--AVERAGE CAPITAL, ETC., PER EMPLOYEE.

Classification.	Average capital, product and yearly earnings in		Increase, +, or decrease, -, in 1905.	
	1904.	1905.	Amount.	Per cent.
Average capital per employee.....	\$6,481 62	\$5,643 51	- \$838 11	12.93
Average product per employee.....	3,440 18	3,331 76	- 108 42	3.15
Average yearly earnings.....	513 09	575 99	+ \$62 90	6.06

TABLE V--RANGE OF EMPLOYMENT AND OF UNEMPLOYMENT.

Months.	Total no. of persons employed in		Percentages of			
	1904.	1905.	Employment in		Unemployment in	
			1904.	1905.	1904.	1905.
January.....	2,591	2,788	81.63	72.98	18.37	27.02
February.....	2,963	2,831	92.50	73.92	7.00	26.08
March.....	3,174	3,010	100.—	78.51	0.00	21.49
April.....	3,025	2,961	95.31	77.23	4.69	22.77
May.....	2,784	2,532	87.71	71.47	12.29	23.53
June.....	2,552	3,131	80.40	81.74	19.60	18.26
July.....	2,494	3,017	78.58	79.47	21.42	20.53
August.....	2,639	3,274	81.14	85.45	16.86	14.15
September.....	2,674	3,668	84.25	94.89	15.75	5.11
October.....	2,319	3,008	73.06	80.80	26.94	19.20
November.....	2,452	3,666	77.25	95.56	22.75	4.64
December.....	2,688	3,831	84.69	100.—	15.31	0.00
Average.....	2,634	3,185	81.88	83.07	15.12	16.91

TABLE VI—OCCUPATIONS AND WAGES OF EMPLOYEES.

Occupations.	Total no. of persons.		Average hours per day.		Average wages per day.		Average wages per hour.		Increase, +, or decrease, per day in 1905.		
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	Amt.	Per ct.	
Apprentices.....	108	91	10.	10.	\$1.074	\$1.301	\$.107	\$.13	+	.227	21.14
Assemblers.....	33	26	10.	10.	1.626	1.718	.163	.172	+	.092	5.66
Blacksmiths.....	96	91	10.	10.	2.105	2.215	.211	.222	+	.11	5.23
Blacksmiths' helpers..	13	18	10.	10.	1.588	1.492	.159	.149	-	0.6	6.05
Boiler makers.....	5	5	10.	10.	3.05	3.15	.305	.315	+	.10	3.29
Bookkeepers.....	1	2	10.	10.	1.50	1.75	.15	.175	+	.25	16.67
Bookkeepers, female..		1		10.		.75		.075			
Boys.....	17	6	10.	10.	.859	.875	.086	.088	+	.16	18.68
Bundlers.....	8	4	10.	10.	1.551	1.538	.153	.154	+	.007	0.46
Carpenters.....	42	43	10.	10.	2.09	2.188	.209	.219	+	.098	4.69
Carpenters' helpers...	3	4	10.	10.	1.417	1.50	.142	.15	+	.083	5.86
Chippers.....		21		10.		2.40		.246			
Clerks, female.....	14	21	10.	10.	1.00	1.00	.10	.10	+	.00	
Core makers.....	54	70	10.	10.	1.853	2.261	.185	.226	+	.408	22.20
Cupola tenders.....	6	5	10.	10.	1.862	2.11	.168	.211	+	.248	13.32
Draftsmen.....	7	6	10.	10.	1.963	1.75	.196	.175	+	2.13	10.85
Drillers.....	3	2	10.	10.	1.25	1.00	.125	.10	+	.25	20.00
Electricians.....		3		10.		2.583		.258			
Elevator men.....		5		10.		1.37		.137			
Engineers.....	7	7	10.	10.	2.084	2.01	.206	.20	+	.054	2.62
Erectors.....	11	79	10.	10.	1.682	2.296	.168	.23	+	6.14	36.50
Firemen.....	2	9	10.	10.	1.565	1.756	.157	.176	+	.191	12.20
Foremen.....	9	9	10.	10.	3.15	2.951	.295	.295	+	.199	6.32
Foundrymen.....	41	53	10.	10.	1.836	1.533	.184	.153	+	.303	16.50
Foundrymen's helpers	2	2	10.	10.	1.50	1.5	.15	.15			
Galvanizers.....	1	1	10.	10.	2.50	2.50	.25	.25	+	.053	3.64
Grinders.....	30	16	10.	10.	1.509	1.564	.151	.156	+	.05	.32
Helpers.....	147	239	10.	10.	1.548	1.543	.153	.154	-	.035	
Hoop makers.....	1		10.	10.	1.75		.175				
Inspectors.....	18	3	10.	10.	2.581	2.0	.258	.20	-	.581	22.51
Laborers.....	751	837	10.	10.	1.567	1.563	.157	.157	-	.001	.06
Loaders.....	7		10.	10.	1.34		.13				
Machine operators.....	411	589	10.	10.	1.772	2.215	.177	.221	+	.448	25.00
Machine ops.' helpers	16	11	10.	10.	1.416	2.59	.142	.259	+	1.174	82.91
Machinists.....	318	293	10.	10.	2.252	2.309	.223	.231	+	.037	2.53
Machinists' helpers...	6		10.	10.	1.50		.15				
Managers.....	1	1	10.	10.	4.0	4.00	.40	.40			
Melters.....	1		10.	10.	1.75		.17				
Millwrights.....	1	5	10.	10.	2.25	.210	.225	.21	-	.15	6.67
Millwrights' helpers...				10.		1.60		.16			
Molders.....	293	277	10.	10.	2.564	2.654	.256	.265	+	.69	3.51
Molders' helpers.....	34	4	10.	10.	1.676	1.063	.168	.106	-	.613	36.57
Packers.....		1		10.		1.90		.19			
Painters.....	126	152	10.	10.	2.016	2.107	.202	.211	+	.091	4.51
Painters' helpers.....	3	2	10.	10.	1.58	1.50	.158	.15	-	.08	5.06
Pattern makers.....	27	37	10.	10.	2.752	2.886	.275	.289	+	.131	4.87
Pipemen.....		21		10.		1.719		.172			
Pipe fitters.....	2		10.	10.	2.00		.20				
Plow makers.....	1	10	10.	10.	1.75	2.026	.175	.203	+	.276	15.77
Polishers.....		2		10.		2.215		.222			
Printers.....	9	8	10.	10.	1.39	1.40	.139	.14	+	.01	.72
Punchers.....	6	14	10.	10.	1.585	1.524	.159	.152	-	.061	3.22
Repairers.....		2		10.		1.625		.163			
Riveters.....	2		10.	10.	1.50		.15				
Shippers.....	25	34	10.	10.	1.733	1.631	.173	.163	-	.102	5.92
Shopmen.....	225	178	10.	10.	2.001	2.143	.20	.214	+	.142	7.01
Shopmen's helpers.....	1	1	10.	10.	.50	1.25	.05	.125	+	.75	150.00
Steam fitters.....		8		10.		2.25		.225			
Tank makers.....		78		10.		2.193		.219			
Teamsters.....	14	7	10.14	10.	1.776	2.41	.175	.241	+	.634	35.70
Testers.....		82		10.		2.057		.206			
Tinners.....	1	3	10.	10.	2.50	2.383	.25	.238	-	.117	4.68
Tire setters.....		2		10.		1.38		.138			
Truckers.....		10		10.		1.75		.175			
Watchmen.....	24	33	11.96	12.33	1.747	1.805	.146	.146	+	.058	3.32
Wheel makers.....	3		10.	10.	2.017		.202				
Wood workers.....	219	171	10.	10.	1.65	1.812	.165	.181	+	.162	9.82
Total and average.	3,212	3,695	10.01	10.02	\$1.844	\$1.972	\$.184	\$.197	+	.128	6.94

TABLE VII—CLASSIFICATION OF DAILY WAGES.

Classified daily wages, (inclusive).	Total number of persons employed.						Average wages per day.					
	Male.		Female.		Total.		Male.		Female.		Total.	
	1904	1905	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.
\$.50 to \$.58...	27	26			27	26	\$.509	\$.50			\$.509	\$.50
.59 to .66...	11	7			11	7	.623	.607			.623	.627
.67 to .74...	5	1			5	1	.688	.67			.688	.67
.75 to .83...	48	52		1	48	53	.761	.764		.75	.761	.764
.84 to .91...	7	13			7	13	.897	.892			.897	.892
.92 to .99...	1				1		.95				.95	
1.00 to 1.08...	73	58	14	21	87	79	1.001	1.001	\$1.00	\$1.00	1.001	1.001
1.09 to 1.16...	69	29			69	29	1.13	1.127			1.13	1.127
1.17 to 1.24...	5	3			5	3	1.20	1.20			1.20	1.20
1.25 to 1.33...	196	203			196	203	1.257	1.251			1.257	1.251
1.34 to 1.41...	139	79			139	79	1.381	1.375			1.381	1.375
1.42 to 1.49...	21	1			21	1	1.45	1.47			1.45	1.47
1.50 to 1.58...	462	515			462	515	1.501	1.50			1.501	1.50
1.59 to 1.66...	370	374			370	374	1.636	1.627			1.636	1.627
1.67 to 1.74...	38	22			38	22	1.688	1.684			1.688	1.684
1.75 to 1.83...	444	534			444	534	1.753	1.751			1.753	1.751
1.84 to 1.91...	44	30			44	30	1.875	1.873			1.875	1.873
1.92 to 1.99...	18	4			18	4	1.945	1.92			1.945	1.92
2.00 to 2.08...	380	421			380	421	2.002	2.001			2.002	2.001
2.09 to 2.16...	36	17			36	17	2.125	1.141			2.125	2.141
2.17 to 2.24...	6	72			6	72	2.195	2.17			2.195	2.17
2.25 to 2.33...	192	198			192	198	2.257	2.225			2.257	2.225
2.34 to 2.41...	17	17			17	17	2.378	2.39			2.378	2.39
2.42 to 2.49...	16	5			16	5	2.438	2.46			2.438	2.46
2.50 to 2.58...	202	283			202	283	2.501	2.50			2.501	2.50
2.59 to 2.66...	44	64			44	64	2.644	2.62			2.644	2.62
2.67 to 2.74...	13	42			13	42	2.70	2.681			2.70	2.681
2.75 to 2.83...	68	140			68	140	2.757	2.767			2.757	2.767
2.84 to 2.91...	121	194			121	194	2.853	2.897			2.853	2.897
2.92 to 2.99...	6	42			6	42	2.95	2.97			2.95	2.97
3.00 to 3.8...	63	153			63	152	3.001	3.00			3.001	3.00
3.09 to 3.16...	7	5			7	5	3.121	3.11			3.121	3.11
3.17 to 3.24...	3	4			3	4	3.19	3.192			3.19	3.192
3.25 to 3.33...	7	13			7	13	3.276	3.273			3.276	3.273
3.34 to 3.41...	4	2			4	2	3.388	3.40			3.388	3.40
3.42 to 3.49...	1				1		3.45				3.45	
3.50 to 3.58...	21	23			21	23	3.502	3.502			3.502	3.502
3.59 to 3.66...	2	3			2	3	3.625	3.60			3.625	3.60
3.67 to 3.74...	1				1		3.70				3.70	
3.75 to 3.83...		23				23		3.775				3.775
3.84 to 3.91...	1	1			1	1	3.85	3.85			3.85	3.85
4.00 to 4.08...	5	1			5	1	4.01	4.00			4.01	4.00
4.09 to 4.16...	1				1		4.10				4.10	
4.34 to 4.41...	1				1		4.38				4.38	
4.42 to 4.49...	1				1		4.45				4.45	
4.59 to 4.66...	1				1		4.65				4.65	
Total and av..	3,198	3,673	14	22	3,212	3,695	\$1.848	\$1.978	\$1.00	\$.989	\$1.844	\$1.972

Remarks.—The manufacture of agricultural implements has for years been one of the most important industries of the state. The census of 1900 gave Wisconsin fifth rank among the states in the value of the product of this industry. A slight increase in the capital invested, and a large increase in the materials used, the wages paid, and the output, give evidence that the industry continued to enjoy growth during the period covered by this report. The 13 per cent. less capital invested per em-

ployee is to be explained by the 16 per cent. increase in the number of the latter. So also the 3 per cent. less average product per employee is accounted for by the fact that the average number of days of operation was nearly 4 per cent. less in 1905. Women were employed only in the minor occupations of the industry—those of bookkeepers and clerks. The average wages of female help in 1905 were slightly lower than in 1904, owing to the employment in 1905 of one person at a lower wage than that received by any of the employees in the preceding year. It is of course only when very few persons are employed that the wages of one employee will affect perceptibly the average wages of all. The average daily wages of all employees increased nearly 7 per cent., and the average yearly earnings over 6 per cent. The difference is due chiefly to the 4 per cent. fewer days of operation in 1905, already mentioned. The proportion of the industry product paid in wages, about 39 per cent., as compared with the proportion devoted to the profit and minor expense fund, 61 per cent., is considerably lower than the average.

2. ARTISANS' TOOLS—5 ESTABLISHMENTS.

TABLE I—MANAGEMENT AND OPERATION.

Classification.	Number in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount	Per cent
Number of private firms	5	5	.....	.....
Number of male partners	9	8	— 1	11.11
Number of female partners .....	.....	.....	.....	.....
Total number of partners	9	8	— 1	11.11
Number of corporations .....	.....	.....	.....	.....
Number of male stockholders .....	.....	.....	.....	.....
Number of female stockholders .....	.....	.....	.....	.....
Total number of stockholders .....	.....	.....	.....	.....
Total number of partners and stockholders	9	8	— 1	11.11
Smallest number of persons employed	74	81	+ 7	9.46
Greatest number of persons employed	78	87	+ 9	11.54
Average number of persons employed	75	84	+ 9	12.00
Average days in operation	314	302	— 12	3.82

TABLE II—INVESTMENT.

Classification.	Capital invested in		Increase, +, or decrease, —, in 1905,	
	1904.	1905	Amount.	Per cent
Land	\$30,400 00	\$31,450 00	+\$1,050 00	5.15
Buildings and fixtures	16,789 80	22,200 00	+ 5,410 20	32.22
Machinery, etc.	32,457 53	34,532 88	+ 2,075 35	6.37
Cash and other capital	25,227 67	20,763 58	— 4,464 09	17.70
Total	\$94,875 00	\$98,946 46	+\$4,071 46	4.29

TABLE III A—VALUE OF MATERIALS AND LABOR EMPLOYED, AND OF PRODUCT.

Classification.	Value of material used, wages and salaries paid in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Raw material used	\$31,105 66	\$33,150 00	+\$2,044 34	6.57
Other material used	3,965 00	6,861 00	+ 3,166 00	85.68
Wages	34,588 65	37,425 28	+ 3,416 63	10.06
Salaries	20,119 00	21,610 00	+ 1,491 00	7.41
Profit and minor expenses ..	27,601 11	28,612 72	+ 1,011 61	3.67
Goods made and work done..	116,539 42	127,659 00	+11,129 58	9.55

TABLE III B—ANALYSIS OF TABLE III A.

Classification.	1904.	1905.
Value of goods made and work done (gross product)	\$116,529 42	\$127,659 00
Value of stock used and other material consumed in production	34,800 06	40,011 00
Industry product (gross production less value of stock and material)	81,728 76	87,648 00
Wages and salaries (Labor's direct share of product)	54,127 65	59,035 28
Profit and minor expense fund (industry product less wages)	27,601 11	28,612 72
Percentage of industry product paid in wages	Per cent. 66.23	Per cent. 67.35
Percentage of industry product devoted to profit and minor expenses	33.77	32.65

TABLE IV—AVERAGE CAPITAL ETC., PER EMPLOYEE.

Classification.	Average capital, product and yearly earnings in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount	Per cent.
Average capital per employee	\$1,265 00	\$1,177 93	—\$87 07	6.88
Average product per employee	1,559 73	1,519 75	— 35 98	2.19
Average yearly earnings	433 45	445 54	+ 12 09	1.74

TABLE V—RANGE OF EMPLOYMENT AND OF UNEMPLOYMENT.

Months.	Total no. of persons employed in		Percentages of			
			Employment in		Unemployment in	
	1904.	1905.	1904.	1905.	1904.	1905.
January	76	82	97.44	92.13	2.56	7.87
February	76	85	97.44	95.51	2.56	4.49
March	76	85	97.44	95.51	2.56	4.49
April	75	89	96.16	100.—	3.84	0.00
May	75	86	96.16	96.63	3.84	3.37
June	78	87	100.—	97.75	0.00	2.25
July	76	85	97.44	95.51	2.56	4.49
August	75	85	96.16	95.51	3.84	4.49
September	75	87	96.16	97.75	3.84	2.25
October	75	83	96.16	93.26	3.84	6.74
November	75	83	96.16	92.13	3.84	7.87
December	74	81	94.87	91.01	5.13	8.99
Average	75	84	96.16	94.33	3.84	5.62

TABLE VI—OCCUPATIONS AND WAGES OF EMPLOYEES.

Occupations.	Total no. of persons.		Average hours per day.		Average wages per day.		Average wages per hour.		Increase, +, or decrease, —, per day in 1905.	
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	Amt.	Per ct.
Apprentices	10	5	9.10	10.	\$1.13	\$.75	\$.124	\$.075	— .38	33.62
Blacksmiths	1	2	9.	10.	3.00	2.625	.333	.263	— .375	12.50
File cutters	23	25	10.	10.	1.746	1.76	.175	.176	+ .014	.80
Grinders	11	12	10.	10.	1.795	1.75	.179	.175	— .045	2.51
Helpers	13	17	9.77	9.97	1.692	.906	.173	.091	— .783	46.45
Machinists	20	26	9.	10.	2.25	2.606	.25	.26	+ .356	15.82
Total and av....	78	87	9.577	9.994	\$1.81	\$1.806	\$.189	\$.181	— .004	.22

TABLE VII—CLASSIFICATION OF DAILY WAGES.

Classified daily wages (inclusive.)	Total number of persons employed.						Average wages per day.					
	Male.		Female.		Total.		Male.		Female.		Total.	
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.
\$0.75 to \$0.83..	.....	19	.....	.....	.....	19	.....	\$.75	.....	.....	.....	\$.75
.84 to .91..	8	.....	.....	.....	8	.....	.....	\$.90	.....	.....	.....	\$.90
1.25 to 1.33..	10	12	.....	.....	10	12	1.25	1.25	.....	.....	.....	1.25
1.50 to 1.58..	4	1	.....	.....	4	1	1.50	1.30	.....	.....	.....	1.50
1.59 to 1.66..	1	1	.....	.....	1	1	1.66	1.65	.....	.....	.....	1.66
1.75 to 1.83..	20	13	.....	.....	20	13	1.75	1.75	.....	.....	.....	1.75
2.00 to 2.08..	13	1	.....	.....	13	1	2.008	2.00	.....	.....	.....	2.008
2.25 to 2.33..	11	15	.....	.....	11	15	2.25	2.25	.....	.....	.....	2.25
2.50 to 2.58..	10	15	.....	.....	10	15	2.50	2.50	.....	.....	.....	2.50
2.75 to 2.83..	.....	6	.....	.....	.....	6	.....	2.75	.....	.....	.....	2.75
3.00 to 3.08..	1	3	.....	.....	1	3	3.00	3.00	.....	.....	.....	3.00
3.25 to 3.33..	.....	1	.....	.....	.....	1	.....	3.25	.....	.....	.....	3.25
Total ...	78	87	.....	.....	78	87	\$1.81	\$1.806	.....	.....	.....	\$1.81

Remarks.—Somewhat less than a majority of the firms engaged in this industry reported for 1904 and 1905. The statistics are therefore less certain to show the actual progress of the industry. Employment was very uniform throughout each year, the maximum of unemployment for any month being only 5 per cent. in 1904, and 9 per cent. in 1905. There was a high minimum and a low maximum of wages received, the average wages being high as compared with those in other industries. The average daily wages for 1905 were slightly lower, owing to the lower wages paid to those just beginning work in the industry—the apprentices and helpers. The decrease of 2 per cent. in the average yearly earnings is to be explained by the decrease of 4 per cent. in the number of days of operation, as is also the 2 per cent. decrease in the average yearly product of each employee. A comparatively large proportion of the industry product was paid in wages each year—66 per cent. There are few distinct occupations in this industry, all workmen being in reality machinists. No female help was employed. The industry exhibits considerable progress for the period covered, as is evidenced by the increase of 4 per cent. in the capital invested, of 12 per cent. in the number of persons employed, of 15 per cent. in materials used, and of 10 per cent. in the gross product. The 32 per cent. increase in the amount invested in buildings points toward a greater permanency of the investment of capital in this industry.

3. BAKERIES—27 ESTABLISHMENTS.

TABLE I—MANAGEMENT AND OPERATION.

Classification.	Number in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent.
Number of private firms	24	24	.....	.....
Number of male partners	28	28	.....	.....
Number of female partners	3	3	.....	.....
Total number of partners	31	31	.....	.....
Number of corporations	3	3	.....	.....
Number of male stockholders	10	10	.....	.....
Number of female stockholders	2	2	.....	.....
Total number of stockholders	12	12	.....	.....
Total number of partners and stockholders..	43	43	.....	.....
Smallest number of persons employed	299	239	— 10	3.34
Greatest number of persons employed	329	335	+ 6	1.82
Average number of persons employed	311	310	— 1	0.32
Average days in operation	467	467	.....	.....

TABLE II—INVESTMENT.

Classification.	Capital invested in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Land	\$61,700 00	\$31,700 00	.....	.....
Building and fixtures	134,787 41	135,287 41	+ 550 00	0.37
Machinery, etc.	96,757 91	97,445 28	+ 687 37	0.71
Cash and other capital	83,469 27	89,620 09	+ 3,150 82	3.64
Total	\$379,714 59	\$384,052 78	+\$4,338 19	1.14

TABLE III A—VALUE OF MATERIALS AND LABOR EMPLOYED, AND OF PRODUCTS.

Classification.	Value of material used, wages and salaries paid in		Increase, +, or decrease, —, in 1905	
	1901.	1905.	Amount.	Per cent
Raw material used	\$490,288 26	\$486,433 11	—\$3,855 15	0.79
Other material used	89,010 70	78,954 84	— 1,055 86	1.32
Wages	161,824 58	160,985 49	— 839 09	0.52
Salaries	54,033 50	53,004 17	— 1,029 33	1.90
Profit and minor expenses ...	195,599 53	195,197 16	— 402 37	0.21
Goods made or work done ...	981,756 57	974,574 77	— 7,181 80	0.73

TABLE III B—ANALYSIS OF TABLE III A.

Classification.	1904	1905
Goods made and work done (gross product).....	\$981,756 57	\$974,574 77
Value of stock used and material consumed in production	570,298 96	565,387 95
Industry product (gross production less value of stock and material)	411,457 61	409,196 82
Wages and salaries (Labor's direct share of product	215,858 08	213,989 63
Profit and minor expense fund (industry product less wages)	195,599 53	195,197 16
Percentage of industry product paid in wages	52.47	52.30
Percentage of industry product devoted to profit and minor expense	47.53	47.70

TABLE IV—AVERAGE CAPITAL ETC., PER EMPLOYEE.

Classification.	Average capital, product and yearly Earnings in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent.
Average capital per employee	\$1,220 95	\$1,238 88	+ \$17 93	1.47
Average product per employee	3,156 77	3,143 79	— 12 98	0.41
Average yearly earnings	520 34	519 31	— 1 03	0.20

TABLE V—RANGE OF EMPLOYMENT AND OF UNEMPLOYMENT.

Months.	Total no. of persons employed in		Percentages of			
			Employment in		Unemployment in	
	1904.	1905.	1904.	1905.	1904.	1905.
January	299	307	90.88	91.64	9.12	8.33
February	300	289	91.19	86.27	8.81	13.73
March	306	292	93.01	87.16	6.99	12.84
April	308	304	93.62	90.75	6.38	9.25
May	311	307	94.53	91.64	5.47	8.36
June	319	325	93.93	97.01	3.04	2.99
July	329	315	100.—	94.03	0.00	5.97
August	325	319	98.78	95.22	1.22	4.78
September	319	335	96.96	100.—	3.04	0.00
October	309	317	93.92	94.63	6.08	5.37
November	305	305	93.01	91.04	6.99	8.96
December	204	308	92.40	91.94	7.60	8.06
Average	311	310	94.53	92.54	5.47	7.46

TABLE VI—OCCUPATIONS AND WAGES OF EMPLOYEES.

Occupations.	Total no. of persons.		Average hours per day.		Average wages per day.		Average wages per hour.		Increase, +, or decrease, —, per day in 1905.	
	1901	1905.	1904	1905.	1904.	1905.	1904.	1905.	Amt. Per ct.	
Apprentices	2	.....	10.00	.....	\$ .96	.....	\$.096	.....	.....	.....
Bakers	159	151	10.04	9.93	2.159	2.159	.215	.217	.....	.....
Bakers, female	3	3	10.00	10.00	1.307	1.447	.131	.145	+ .14	10.71
Bakers' helpers	40	34	10.00	9.94	1.125	1.045	.113	.105	— .08	7.11
Bakers' helpers, female	13	17	10.23	9.94	.80	.911	.078	.092	+ .111	13.87
Bench hands .....	.....	2	.....	10.00	.....	1.875	.....	.188	.....	.....
Bookkeepers	2	1	9.00	10.00	2.50	2.50	.278	.250	.....	.....
Bookkeepers, female .....	.....	1	.....	10.00	.....	1.00	.....	.100	.....	.....
Boys	5	.....	10.00	.....	.97	.....	.097	.....	.....	.....
Cleaners, female .....	.....	3	.....	10.00	.....	1.00	.....	.100	.....	.....
Clerks	1	3	0.00	10.00	.75	2.00	.075	.200	+1.25	196.67
Clerks, female	20	26	9.95	10.04	.872	.864	.088	.086	— .008	0.92
Cooks, female	2	2	0.00	9.00	.75	.50	.075	.056	— .25	33.33
Drivers	48	51	9.54	9.84	1.989	1.993	.208	.203	+ .004	0.20
Engineers	1	2	10.00	10.00	2.33	2.415	.233	.242	+ .085	3.65
Foremen .....	.....	2	.....	10.00	.....	2.75	.....	.275	.....	.....
Hostlers .....	.....	4	.....	0.00	.....	2.04	.....	.204	.....	.....
Laborers	10	2	10.40	10.00	1.802	1.00	.173	.193	— .832	44.51
Machinists	1	.....	10.00	.....	2.50	.....	.250	.....	.....	.....
Mixers	1	.....	10.00	.....	2.50	.....	.250	.....	.....	.....
Packers	6	6	9.67	0.00	1.523	1.71	.158	.171	+ .182	11.91
Packers, female	4	.....	9.25	.....	1.607	.....	.174	.....	.....	.....
Pastry cooks	1	.....	10.00	.....	1.75	.....	.175	.....	.....	.....
Receivers	1	.....	10.00	.....	2.00	.....	.200	.....	.....	.....
Salesmen .....	.....	2	.....	10.00	.....	3.75	.....	.375	.....	.....
Shipping clerks	3	4	10.00	10.00	2.117	1.875	.212	.188	— .242	11.43
Stenographers, female	1	1	9.00	10.00	1.17	1.33	.130	.133	+ .10	13.63
Watchmen	1	1	10.00	10.00	2.00	2.00	.200	.200	.....	.....
Wrappers, female	6	.....	8.00	.....	.697	.....	.087	.....	.....	.....
Total	328	320	9.91	9.69	\$1.773	\$1.793	\$.179	\$.180	+\$.02	1.13

TABLE VII—CLASSIFICATION OF DAILY WAGES.

Classified daily wages (inclusive)	Total number of persons employed.						Average wages per day.					
	Male.		Female.		Total.		Male.		Female.		Total.	
	1904.	1905.	1904	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.
\$0.34 to \$0.41..	1	.....	.....	.....	1	.....	\$0.35	.....	.....	.....	\$0.35	.....
.42 to .49..	.....	.....	1	.....	1	.....	.....	.....	.....	.....	.42	.....
.50 to .58..	3	2	5	5	8	7	.527	\$0.50	.50	\$0.50	.51	\$0.50
.59 to .66..	.....	4	.....	.....	.....	4	.....	.638	.....	.....	.....	.638
.67 to .74..	3	.....	6	2	9	2	.69	.....	.67	.67	.677	.67
.75 to .83..	9	10	12	16	21	26	.768	.774	.83	.806	.803	.793
.84 to .91..	5	1	2	6	7	7	.86	.85	.87	.847	.863	.847
.92 to .99..	1	1	3	1	4	2	.92	.92	.947	.96	.94	.94
1.00 to 1.08..	9	17	13	16	23	32	1.00	1.004	1.003	1.011	1.002	1.008
1.17 to 1.24..	1	9	1	.....	2	9	1.20	1.21	1.17	.....	1.185	1.21
1.25 to 1.33..	9	3	1	4	10	7	1.279	1.303	1.25	1.27	1.276	1.284
1.34 to 1.41..	2	2	.....	.....	2	2	1.40	1.40	.....	.....	1.40	1.40
1.42 to 1.49..	.....	.....	1	1	1	1	.....	.....	1.42	1.42	1.42	1.42
1.50 to 1.58..	17	18	.....	1	17	19	1.50	1.502	.....	1.50	1.50	1.503
1.59 to 1.66..	2	3	.....	.....	2	3	1.66	1.633	.....	.....	1.66	1.633
1.67 to 1.74..	19	2	4	1	23	4	1.672	1.67	1.67	1.67	1.671	1.67
1.75 to 1.83..	6	8	.....	.....	6	8	1.803	1.77	.....	.....	1.803	1.77
1.84 to 1.91..	3	3	.....	.....	3	3	1.847	1.867	.....	.....	1.847	1.867
1.92 to 1.99..	.....	34	.....	.....	.....	34	.....	1.948	.....	.....	.....	1.948
2.00 to 2.08..	116	53	.....	.....	116	53	2.005	2.011	.....	.....	2.005	2.011
2.09 to 2.16..	2	1	.....	.....	2	1	2.16	2.16	.....	.....	2.16	2.16
2.17 to 2.24..	6	8	.....	.....	6	8	2.17	2.17	.....	.....	2.17	2.17
2.25 to 2.33..	9	18	.....	.....	9	18	2.33	2.281	.....	.....	2.33	2.281
2.34 to 2.41..	4	.....	.....	.....	4	.....	2.373	.....	.....	.....	2.373	.....
2.50 to 2.58..	31	37	.....	.....	31	37	2.502	2.50	.....	.....	2.502	2.50
2.59 to 2.66..	4	4	.....	.....	4	4	2.60	2.60	.....	.....	2.60	2.60
2.67 to 2.74..	2	.....	.....	.....	2	.....	2.67	.....	.....	.....	2.67	.....
2.75 to 2.83..	1	5	.....	.....	1	5	2.75	2.798	.....	.....	2.75	2.798
2.84 to 2.91..	2	1	.....	.....	2	1	2.855	2.85	.....	.....	2.855	2.85
2.92 to 2.99..	.....	1	.....	.....	.....	1	.....	2.92	.....	.....	.....	2.92
3.00 to 3.08..	10	18	.....	.....	10	18	3.00	3.00	.....	.....	3.00	3.00
3.25 to 3.33..	2	1	.....	.....	2	1	3.29	3.25	.....	.....	3.29	3.25
3.50 to 3.58..	.....	1	.....	.....	.....	1	.....	3.50	.....	.....	.....	3.50
4.00 to 4.08..	.....	1	.....	.....	.....	1	.....	4.00	.....	.....	.....	4.00
Total ..	279	267	49	53	328	320	1.922	1.967	.919	.917	1.773	1.793

Remarks.—The most noticeable fact in connection with this industry is the very slight difference in the reports of the two years. The industry cannot therefore be said to have experienced any considerable growth during this period. There was a slightly increased investment in buildings and in machinery, and an insignificant decrease in the value of materials used and of wages and salaries paid, and in the average number of persons employed, the difference being in each case about 1 per cent. or less. The average number of days of operation, 467 each year, indicates that in several of the establishments day and night shifts were employed. Employment was fairly uniform throughout each year, there being a gradual increase in the number employed up to the summer months, when the maximum was reached, followed by a gradual decrease until

about the end of the year. Female help was employed chiefly in the subordinate occupations. Exceptions were the employment of 3 women as bakers and 2 as cooks each year, and from 13 to 17 as bakers' helpers. Four more women were employed in 1905 than in 1904—an increase of about 8 per cent. Although female bakers and bakers' helpers received 11 per cent. and 14 per cent. higher wages respectively in 1905, female cooks received 33 per cent. less per day, and the average daily wages for female help decreased about 2 per cent. for 1905. Men's wages, on the contrary, increased over 2 per cent. The employment of six women as wrappers in 1904 with 8 hours' work per day, and none in 1905, made the average number of hours for women about 2 per cent. greater for the latter year. But for those persons actually employed both years the hours were slightly shorter in 1905.

4. BEEF AND PORK PACKING—11 ESTABLISHMENTS.

TABLE I—MANAGEMENT AND OPERATION.

Classification.	Number in		Increase, +, or decrease, —, in 1905,	
	1904.	1905.	Amount.	Per cent
Number of private firms	6	6	.....	.....
Number of male partners	11	11	.....	.....
Number of female partners	3	3	.....	.....
Total number of partners	14	14	.....	.....
Number of corporations	5	5	.....	.....
Number of male stockholders	33	32	— 1	3.03
Number of female stockholders .....	.....	1	+ 1	.....
Total number of stockholders	33	33	.....	.....
Total number of partners and stockholders	47	47	.....	.....
Smallest number of persons employed	1,035	1,210	+ 175	16.91
Greatest number of persons employed	1,637	1,844	+ 207	12.65
Average number of persons employed	1,287	1,445	+ 158	12.28
Average days in operation	281	285	+ 4	1.42

TABLE II—INVESTMENT.

Classification,	Capital invested in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Land	\$287,434 18	\$299,250 00	+ \$11,815 82	4.15
Buildings and fixtures	573,834 65	591,827 53	+ 17,992 88	3.14
Machinery, etc.	535,936 14	607,817 55	+ 71,881 41	13.41
Cash and other capital	2,558,207 75	2,618,927 09	+ 60,659 34	2.37
Total	\$3,955,472 72	\$4,117,822 17	+ \$162,349 45	4.10

TABLE III A—VALUE OF MATERIALS AND LABOR EMPLOYED, AND OF PRODUCT.

Classification.	Value of material used, wages and salaries paid in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent.
Raw material used	\$11,509,271 45	\$12,851,269 26	+\$1,341,997 81	11.66
Other material used	470,312 70	581,677 03	+ 61,364 33	13.05
Wages	603,858 49	678,861 05	+ 70,002 56	11.59
Salaries	156,120 16	176,655 44	+ 20,535 28	13.15
Profit and minor expenses ..	821,072 71	910,965 98	+ 89,893 27	10.95
Goods made and work done	13,565,635 51	15,149,428 76	+ 1,583,793 25	11.68

TABLE III B—ANALYSIS OF TABLE III A.

Classification.	1904.	1905.
Value of good made and work done (gross product)	\$13,565,635 51	\$15,149,428 76
Value of stock used and other material consumed in production	11,979,584 15	13,332,846 29
Industry product (gross production less value of stock and material)	1,586,051 36	1,766,432 47
Wages and salaries (Labor's direct share of product)	764,978 65	855,516 49
Profit and minor expense fund (industry product less wages)	821,072 71	910,965 98
Percentage of industry product paid in wages	Per cent. 48.23	Per cent. 48.43
Percentage of industry product devoted to profit and minor expenses	51.77	51.57

TABLE IV—AVERAGE CAPITAL ETC., PER EMPLOYEE.

Classification.	Average capital, product and yearly earnings in		Increase, +, or decrease, —, in 1905.	
	1904.	1905	Amount.	Per cent.
Average capital per employee	\$3,073 41	\$3,849 70	— \$223 71	7.28
Average product per employee	10,540 51	10,484 03	— 56 48	0.54
Average yearly earnings	473 08	469 00	— 4 08	0.89

TABLE V—RANGE OF EMPLOYMENT AND OF UNEMPLOYMENT.

Months	Total no. of persons employed in		Percentages of			
			Employment in		Unemployment in	
	1904.	1905.	1904.	1905	1904.	1905.
January	1,687	1,844	100.--	150.00	0.00	0.00
February	1,396	1,590	85.28	88.23	14.72	13.77
March	1,089	1,307	66.52	70.83	33.48	29.12
April	1,035	1,210	63.23	65.62	36.77	34.38
May	1,105	1,238	67.50	67.14	32.50	32.85
June	1,352	1,363	82.59	73.92	17.41	26.08
July	1,404	1,307	85.77	70.88	14.23	29.12
August	1,284	1,383	78.44	75.00	21.56	25.--
September	1,166	1,371	71.23	74.35	28.77	25.65
October	1,163	1,264	71.05	68.55	28.95	31.45
November	1,233	1,655	75.32	89.75	24.68	10.25
December	1,682	1,809	96.64	98.10	3.36	1.90
Average	1,287	1,445	78.62	78.36	21.38	21.64

TABLE VI—OCCUPATIONS AND WAGES OF EMPLOYEES.

Occupations.	Total no. of persons.		Average hours per day.		Average wages per day.		Average wages per hour.		Increase, +, or decrease, —, per day in 1905.	
	1904.	1905.	1904	1905	1904.	1905.	1904.	1905.	Amt.	Per ct.
Barnmen	1	10.	10.	10.	\$2.00	.....	\$.20	.....	.....	.....
Blacksmiths	1	10.	10.	10.	2.50	\$3.50	.25	\$.25	.....	.....
Boys	1	5	10.	10.	1.25	1.15	.125	.115	— \$.10	\$8.00
Butchers	37	323	10.	10.	2.067	2.236	.206	.223	+ .169	8.17
Carpenters	11	26	10.	10.	2.263	2.27	.226	.227	+ .004	0.18
Cashiers, female	1	9.	10.	10.	.....	.83	.....	.092	.....	.....
Casing cleaners	8	4	10.	10.	1.583	1.71	.158	.171	+ .127	8.02
Cellar men	2	1	10.	10.	1.50	1.25	.15	.125	— .25	16.67
Clerks	1	10.	10.	10.	1.50	.....	.15	.....	.....	.....
Clerks, female	3	2	10.	10.	.837	.915	.088	.091	+ .028	3.16
Coopers	23	12	10.	10.	2.367	2.26	.236	.226	— .107	4.52
Electricians	1	1	10.	10.	3.00	3.00	.30	.30	.00	.....
Engineers	10	7	10.	10.	2.529	2.49	.253	.249	— .039	1.54
Firemen	8	2	10.75	10.	2.069	1.575	.192	.157	— .494	23.87
Foremen	5	16	10.	10.	3.828	2.99	.333	.299	— .338	21.88
Helpers	60	105	10.	10.	1.502	1.666	.15	.166	+ .134	10.92
Laborers	755	815	10.	10.	1.598	1.653	.159	.165	+ .055	3.44
Laborers, female	14	20	10.	10.	1.018	1.00	.102	.10	— .018	1.77
Machinists	9	13	10.	10.	2.31	2.264	.231	.226	— .049	2.00
Machine tenders	2	3	10.	10.	2.00	2.17	.20	.217	+ .17	8.50
Meat cutters	2	2	10.	10.5	2.00	1.415	.20	.135	— .585	29.25
Meat trimmers .....	.....	16	.....	10.	.....	1.90	.....	.19	.....	.....
Microscopists, fe- male	1	1	10.	8.	1.50	1.50	.15	.187	.00	.....
Packers	7	10	10.	10.	2.00	1.78	.20	.178	— .22	11.00
Salesmen	7	.....	10.	.....	2.143	.....	.214	.....	.....	.....
Sausage makers.....	53	63	10.	10.	2.118	2.148	.212	.214	+ .03	1.42
Shipping clerks	1	1	10.	10.	.....	2.35	.....	.235	.....	.....
Steam fitters	1	1	10.	10.	2.25	2.25	.225	.225	.....	.....
Stenographers, fe- male	1	1	.....	7.	.....	.83	.....	.115	.....	.....
Teamsters	13	20	10.	10.	1.67	1.702	.167	.17	+ .032	1.92
Watchmen	12	9	10.42	10.22	2.103	1.944	.201	.19	— .159	7.56
Total and av.	1,391	1,481	10.	10.	1.788	1.838	.178	.183	+ .049	2.74

TABLE VII—CLASSIFICATION OF DAILY WAGES.

Classified daily wages (inclusive.)	Total number of personsemployed.						Average wages per day.					
	Male.		Female.		Total.		Male.		Female.		Total.	
	1904	1905.	1904.	1905	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.
\$0.50 to \$0.58.	.....	1	.....	.....	.....	1	.....	\$0.050	.....	.....	.....	\$0.50
.59 to .66.	1	4	.....	.....	.....	1	4	\$0.60	.65	.....	.....	\$0.60
.67 to .74.	.....	1	.....	.....	.....	1	.....	.....	.70	.....	.....	.70
.75 to .83.	5	3	2	3	7	6	.818	.83	\$0.83	\$0.83	.82	.83
.84 to .91.	.....	2	.....	.....	.....	2	.....	.....	.90	.....	.....	.90
1.00 to 1.08.	30	29	14	21	44	50	1.00	1.00	1.00	1.00	1.00	1.00
1.09 to 1.16.	2	.....	.....	.....	.....	2	.....	1.15	.....	.....	.....	1.15
1.17 to 1.24.	8	9	.....	.....	8	9	1.17	1.17	.....	.....	1.17	1.17
1.25 to 1.33.	39	33	1	.....	40	33	1.266	1.262	1.25	.....	1.265	1.262
1.34 to 1.41.	20	15	.....	.....	20	15	1.377	1.368	.....	.....	1.377	1.368
1.42 to 1.49.	.....	6	.....	.....	.....	6	.....	1.42	.....	.....	.....	1.42
1.50 to 1.58.	328	98	1	1	329	99	1.50	1.50	1.50	1.50	1.50	1.50
1.59 to 1.66.	62	295	.....	.....	62	295	1.63	1.622	.....	.....	1.63	1.622
1.67 to 1.74.	51	40	.....	.....	51	40	1.67	1.68	.....	.....	1.67	1.68
1.75 to 1.83.	360	375	.....	.....	360	375	1.752	1.751	.....	.....	1.752	1.751
1.84 to 1.91.	69	91	.....	.....	69	91	1.87	1.877	.....	.....	1.87	1.877
2.00 to 2.08.	204	178	.....	.....	204	178	2.00	2.014	.....	.....	2.00	2.014
2.09 to 2.16.	2	16	.....	.....	2	16	2.15	2.128	.....	.....	2.15	2.128
2.25 to 2.33.	54	64	.....	.....	54	64	2.255	2.252	.....	.....	2.255	2.252
2.34 to 2.41.	.....	1	.....	.....	.....	1	.....	2.35	.....	.....	.....	2.35
2.42 to 2.49.	.....	8	.....	.....	.....	8	.....	2.42	.....	.....	.....	2.42
2.50 to 2.58.	93	138	.....	.....	93	138	2.50	2.50	.....	.....	2.50	2.50
2.59 to 2.66.	.....	1	.....	.....	.....	1	.....	2.60	.....	.....	.....	2.60
2.75 to 2.83.	13	11	.....	.....	13	11	2.753	2.754	.....	.....	2.753	2.754
2.84 to 2.91.	1	1	.....	.....	1	1	2.88	2.88	.....	.....	2.88	2.88
3.00 to 3.08.	19	22	.....	.....	19	22	3.00	3.00	.....	.....	3.00	3.00
3.25 to 3.33.	3	3	.....	.....	3	3	3.303	3.33	.....	.....	3.303	3.33
3.50 to 3.58.	1	3	.....	.....	1	3	3.50	3.50	.....	.....	3.50	3.50
3.67 to 3.74.	1	1	.....	.....	1	1	3.67	3.67	.....	.....	3.67	3.67
3.84 to 3.91.	2	2	.....	.....	2	2	3.85	3.85	.....	.....	3.85	3.85
4.00 to 4.08.	1	1	.....	.....	1	1	4.00	4.00	.....	.....	4.00	4.00
4.17 to 4.24.	3	3	.....	.....	3	3	4.17	4.17	.....	.....	4.17	4.17
4.25 to 4.33.	1	1	.....	.....	1	1	4.33	4.33	.....	.....	4.33	4.33
Total	1,373	1,456	18	25	1,391	1,481	\$1.799	\$1.852	\$1.023	\$1.00	\$1.788	\$1.837

Remarks.—That this industry is in a flourishing condition is evidenced by the 4 per cent. increase in the capital invested—every item of investment showing an increase,—the 12 per cent. increase in the number of employees, and the increase of over 12 per cent. in output. The increase in total wages paid was proportionate to the increase in the industry product. The average yearly earnings were slightly less in 1905, in spite of the increase of 3 per cent. in the average daily wages paid. The discrepancy was probably due to the irregularity of employment, since there was a wide variation in the number of persons employed from month to month. January and December were the busiest months each year, while the period of least activity occurred in the spring, when fewest shipments of live stock would naturally be made. With one exception female help was

employed only in the minor occupations. There was a decrease of 2 per cent. in the average daily wages paid to women, but the average hours of labor also decreased 2 per cent., leaving the average hourly wages the same for the two years.

5. BLANK-BOOKS AND STATIONERY—9 ESTABLISHMENTS.

TABLE I—MANAGEMENT AND OPERATION.

Classification.	Number in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Number of private firms.....	7	7		
Number of male partners.....	9	9		
Number of female partners.....				
Total number of partners.....	9	9		
Number of corporations.....	2	2		
Number of male stockholders.....	8	7	— 1	12.50
Number of female stockholders.....	1	1		
Total number of stockholders.....	9	8	— 1	11.11
Total number of partners and stockholders.....	18	17	— 1	5.56
Smallest number of persons employed.....	272	249	— 23	8.46
Greatest number of persons employed.....	303	300	— 3	0.99
Average number of persons employed.....	288	271	— 17	5.90
Average days in operation.....	315	305	— 10	3.17

TABLE II—INVESTMENT.

Classification.	Capital invested in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Land	\$3,050 00	\$3,050 00		
Buildings and fixtures.....	3,250 00	11,150 00	+ 3,900 00	35.15
Machinery, etc.	55,630 58	59,537 43	+ 3,906 85	7.02
Cash and other capital.....	67,444 39	72,822 71	+ 5,378 32	7.97
Total	\$134,374 97	\$146,560 14	+ \$12,185 17	9.07

TABLE III A—VALUE OF MATERIALS AND LABOR EMPLOYED, AND OF PRODUCT.

Classification.	* Value of material used, wages and salaries paid in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Raw material used.....	\$127,259 15	\$125,795 10	— \$1,464 05	1.15
Other material used.....	32,458 07	32,938 71	+ 480 64	1.48
Wages	91,897 58	89,664 40	— 2,233 18	2.43
Salaries	18,440 00	23,420 62	+ 4,980 62	27.01
Profit and minor expense....	52,137 56	49,194 92	— 2,942 64	5.64
Goods made and work done.	322,192 36	321,013 75	— 1,178 61	0.37

TABLE III B—ANALYSIS OF TABLE III A.

Classification.	1904.	1905.
Value of goods made and work done (gross product)	\$322,192 33	\$321,013 75
Value of stock used and material consumed in production	159,717 22	153,733 81
Industry products (gross production less value of stock and material)	162,475 14	162,279 94
Wages and salaries (Labor's direct share of product)	110,337 58	113,085 02
Profit and minor expense fund (industry product less wages)	52,137 56	49,194 92
	Per cent.	Per cent.
Percentage of industry product paid in wages.....	67.91	69.69
Percentage of industry product devoted to profit and minor expenses.....	32.09	30.31

TABLE IV—AVERAGE CAPITAL, ETC., PER EMPLOYEE.

Classification.	Average capital, product and yearly earnings in		Increase, +, or decrease, -, in 1905.	
	1904	1905.	Amount.	Per cent.
Average capital per employee.....	\$463 58	\$540 81	+ \$74 23	15.91
Average product per employee.....	1,118 72	1,184 55	+ 65 83	5.88
Average yearly earnings.....	319 09	330 86	+ 11 77	3 69

TABLE V—RANGE OF EMPLOYMENT AND OF UNEMPLOYMENT.

Months.	Total no of persons employed in		Percentages of			
	1904.	1905	Employment in		Unemployment in	
			1904.	1905.	1904.	1905.
January	278	300	91.75	100.—	8.25	0.00
February	275	254	90.76	94.67	9.24	5.33
March	272	274	89.77	91.33	10.23	8.67
April	296	267	97.69	89.00	2.31	11.—
May	302	259	99.67	86.33	0.33	13.67
June	292	268	93.37	89.33	3.63	10.67
July	277	261	91.42	87.00	8.58	13.—
August	274	249	90.43	83.00	9.57	17.—
September	282	254	93.07	84.67	6.93	17.33
October	298	271	98.35	90.33	1.65	9.67
November	302	278	99.67	92.67	0.33	7.33
December	303	285	100.—	95.00	0.00	5.—
Average	288	271	95.05	90.33	4.95	9.67

TABLE VI—OCCUPATIONS AND WAGES OF EMPLOYEES.

Occupations.	Total no. of persons.		Average hours per day.		Average wages per day.		Average wages per hour.		Increase, +, or decrease, —, per day in 1905.		
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	Amt.	Per ct.	
Apprentices	17	15	9.12	9.13	\$.842	\$.767	\$.092	\$.084	—	\$.075	8.91
Binders	57	68	9.00	9.09	1.88	1.99	.209	.219	+	.11	5.85
Binders, female	85	60	9.00	9.00	.702	.777	.078	.083	+	.075	10.68
Boys	4		7.50		.493		.066				
Compositors	1		9.00		2.83		.314				
Covermakers, female	6	4	9.00	9.00	1.00	1.25	.111	.139	+	.25	25.00
Feeders		1		10.00			1.00				
Feeders, female	4	4	9.00	10.00	.72	.833	.080	.083	+	.113	15.63
Finishers		1		9.09			.333				
Folders, female	68	21	9.01	9.00	.607	.637	.037	.037	0.00	0.00	
Foremen		2		9.25			2.75			.297	
Forewomen	3		9.67		1.30		.134				
Gilders	4	4	9.00	9.00	2.335	2.00	.259	.222	—	.335	14.35
Helpers	5	6	9.20	9.25	.736	.891	.083	.093	+	.15	21.03
Helpers, female	2	28	9.50	9.00	.75	.696	.079	.077	—	.054	7.20
Leather cutters	3	8	9.00	9.13	1.50	1.706	.137	.187	+	.306	13.73
Machine tenders, female	5	5	10.00	10.00	1.603	1.22	.160	.122	—	.383	23.89
Machinists	4	3	9.75	10.00	2.375	2.133	.244	.218	—	.192	8.08
Paper cutters	3	4	9.00	9.00	2.307	2.313	.253	.257	+	.003	0.23
Paper cutters, female	1	1	10.00	10.00	.73	.85	.078	.085	+	.07	8.97
Pressmen	1	4	9.00	9.00	2.00	2.00	.222	.222	0.00	0.00	
Printers	3	3	9.00	9.00	1.403	2.60	.156	.239	+	1.197	85.32
Rulers	4	2	9.25	9.00	2.083	2.90	.225	.322	+	.817	31.22
Shipping clerks	3	2	9.33	9.50	1.50	1.875	.161	.197	+	.375	25.00
Stitchers, female	10	11	9.00	9.00	.733	.793	.081	.088	+	.032	8.43
Total	328	320	9.91	9.69	\$1.773	\$1.793	\$.179	\$.180	+	\$.02	1.13

TABLE VII—CLASSIFICATION OF DAILY WAGES.

Classified daily wages, (inclusive).	Total number of persons em- ployed.						Average wages per day.						
	Male.		Female.		Total.		Male.		Female.		Total.		
	1904	1905.	1904	1905.	1904	1905.	1904.	1905.	1904.	1905.	1904.	1905.	
\$.33 or less..			1		1					0.33		\$0.33	
.34 to \$.41....			8		8					.38		.38	
.42 to .49....	2		12	7	14	7	\$0.42		.454	\$0.449	.449	\$0.449	
.50 to .58....	11	9	40	27	51	36	.515	\$0.50	.54	.500	.534	.50	
.59 to .66....	1		39	9	40	9	.63		.634	.613	.634	.613	
.67 to .74....	3	1	12	10	15	11	.67	.67	.683	.685	.681	.684	
.75 to .83....	1	3	35	40	36	43	.83	.75	.764	.770	.767	.769	
.84 to .91....		4		2	6	12	.88		.85	.895	.870	.895	
.92 to .99....				7		7			.92		.92		
1.00 to 1.03....	4	7	19	16	23	23	1.00	1.00	1.019	1.005	1.016	1.008	
1.17 to 1.24....	5		4	6	9	6	1.176		1.20	1.17	1.187	1.17	
1.25 to 1.33....	10	2	2	4	12	6	1.283	1.29	1.29	1.25	1.283	1.263	
1.34 to 1.41....		2				2			1.375			1.375	
1.42 to 1.49....	1		1	3	2	3	1.42		1.42	1.42	1.42	1.42	
1.50 to 1.58....	6	13	1		1	13	1.50	1.50	1.50		1.50	1.50	
1.59 to 1.66....		1				1		1.65				1.65	
1.67 to 1.74....	11				11		1.673				1.673		
1.75 to 1.83....	6	5	1		7	5	1.812	1.75	1.83		1.812	1.75	
1.84 to 1.91....	1	1			1	1	1.88	1.85			1.88	1.85	
2.00 to 2.08....	15	53			15	53	2.001	2.00			2.011	2.00	
2.17 to 2.24....	4	2			4	2	2.17	2.17			2.17	2.17	
2.25 to 2.33....	3	6			3	6	2.303	2.25			2.303	2.25	
2.34 to 2.41....	1				1		2.40				2.40		
2.50 to 2.58....	9	10			9	10	2.509	2.505			2.509	2.505	
2.67 to 2.74....	5				5		2.67				2.67		
2.75 to 2.83....	3	4			3	4	2.803	2.775			2.803	2.775	
3.00 to 3.08....	3	3			3	3	3.00	3.00			3.00	3.00	
4.00 to 4.08....		1				1		4.00				4.00	
Total	109	123	184	134	293	257	1.644	1.825	.705	.768	1.055	1.274	

Remarks.—There was an increase of over 9 per cent. in 1905, in the amount of capital invested in this industry. The investment in buildings increased 35 per cent., an indication that the industry is becoming established on a more permanent basis. The number of days of operation was 3 per cent. less in 1905, in consequence of which the output shows a slight decrease—less than 1 per cent. however. A change of unusual interest is that occurring in the relative number of male and female employees. In this industry female help is employed in several of the same occupations as male help. More women were employed each year than men. But in 1905 a decrease of 28 per cent. occurred in the number of women employed, whereas the number of male employees increased 13 per cent. Twenty five fewer women were employed as binders, and 47 fewer as folders; although a part of these may be accounted for in the increase of 26 in the number reported as helpers in 1905. The fact is

worthy of notice that where 3 forewomen were employed in 1904, none was employed in 1905, their places having been taken by men. There was a slight decrease in the hours of labor for female employees. Their average daily wages increased 9 per cent. The wages of women were much lower each year than those of men, even where they were employed in the same occupations. The average daily wages of men increased 11 per cent. The greater irregularity of employment in 1905 reduced the increase in the average yearly earnings of all employees to 4 per cent.

6. BOILERS AND TANKS—21 ESTABLISHMENTS.

TABLE I—MANAGEMENT AND OPERATION.

Classification.	Number in		Increase, +, or decrease, —, in 1905.	
	1904.	1905	Amount.	Per cent
Number of private firms	12	12	.....	.....
Number of male partners	18	17	— 1	5.56
Number of female partners	2	4	+ 2	100.—
Total number of partners	20	21	+ 1	5.00
Number of corporations	9	9	.....	.....
Number of male stockholders	66	71	+ 5	7.58
Number of female stockholders	9	11	+ 2	22.22
Total number of stockholders	75	82	+ 7	9.33
Total number of partners and stockholders	95	103	+ 8	8.42
Smallest number of persons employed	574	618	+ 44	7.67
Greatest number of persons employed	700	695	— 5	0.71
Average number of persons employed	617	659	+ 42	6.81
Average days in operation	283	283	.....	.....

TABLE II—INVESTMENT.

Classification.	Capital invested in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Land	\$125,250 00	\$125,836 76	+ 586 76	0.47
Buildings and fixtures	146,343 91	146,211 91	— 132 00	0.09
Machinery, etc.	440,727 78	473,927 63	+ 33,199 85	7.53
Cash and other capital	362,094 67	340,271 87	— 21,822 80	6.03
Total	\$1,074,416 36	\$1,086,248 17	+\$11,831 81	1.10

TABLE III A—VALUE OF MATERIALS AND LABOR EMPLOYED, AND OF PRODUCT.

Classification.	Value of material used wages and salaries paid in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Raw material used	\$767,620 59	\$820,664 78	+ \$53,044 19	6.91
Wages	340,200 66	371,532 87	+ 31,332 21	9.21
Other material used	55,414 62	98,297 27	+ 2,882 65	3.02
Salaries	61,974 33	74,842 40	+ 9,868 07	15.19
Profit and minor expenses ...	294,619 23	304,885 95	+ 10,266 72	3.48
Goods made and work done .	1,562,829 43	1,670,223 27	+ 107,393 84	6.73

TABLE III B—ANALYSIS OF TABLE III A.

Classification.	1904.	1905.
Value of goods made and work done (gross product)	\$1,562,829 43	\$1,670,223 27
Value of stock used and other material consumed in production	863,035 21	9 8,962 05
Industry product (gross production less value of stock and material)	699,794 22	751,261 22
Wages and salaries (Labor's direct share of product)	405,174 99	446,375 27
Profit and minor expense fund (industry product less wages)	294,619 23	304,885 95
Percentage of industry product paid in wages	Per cent. 57.90	Per cent. 59.42
Percentage of industry product devoted to profit and minor exepnses	42.10	40.58

TABLE IV—AVERAGE CAPITAL, ETC., PER EMPLOYEE.

Classification.	Average capital, product and yearly earnings in		Increase, +, or de- crease, —, in 1905.	
	1904.	1905.	Amount.	Per cent.
Average capital per employee	\$1,741 36	\$1,648 33	— \$9,303	5.31
Average product per employee	2,532 95	2,534 48	+ 1.53	0.03
Average yearly earnings	551 38	563 78	+ 12 40	2.25

TABLE V—RANGE OF EMPLOYMENT AND OF UNEMPLOYMENT.

Months.	Total no. of persons employed in		Percentages of			
			Employment in		Unemployment in	
	1904.	1905.	1904.	1905.	1904.	1905
January	700	618	100.—	88.92	0.00	11.08
February	660	618	94.28	88.92	5.72	11.08
March	638	630	91.14	90.65	8.83	9.35
April	633	620	90.43	89.21	9.57	10.79
May	602	654	86.00	94.10	14.00	5.80
June	579	695	82.71	100.—	17.29	0.00
July	574	674	82.00	96.98	18.03	3.02
August	593	645	84.71	92.81	15.29	7.19
September	612	678	87.43	97.56	12.57	2.44
October	610	692	87.14	99.57	12.86	0.43
November	592	692	84.57	99.57	15.43	0.43
December	616	637	88.00	98.85	12.00	1.15
Average	617	659	88.14	94.82	11.86	5.18

TABLE VI—OCCUPATIONS AND WAGES OF EMPLOYEES.

Occupations.	Total no. of persons.		Average hours per day.		Average wages per day.		Average wages per hour.		Increase, +, or decrease, —, per day in 1905.		
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	Amt. Per ct.		
									Amt.	Per ct.	
Apprentices	22	22	9.82	10	\$1.184	\$1.158	\$.12	\$.115	—	\$.026	2.11
Blacksmiths	5	8	10	10	2.25	2.306	.225	.23	+	.056	2.49
Blacksmiths' helpers	1	1	10	10	1.75	1.75	.175	.175	—	—	—
Boiler makers	188	188	9.63	9.93	2.465	2.489	.254	.25	+	.024	.97
Boiler makers' helpers	36	31	9.7	9.74	1.536	1.55	.157	.159	+	.014	.91
Braziers	1	1	10	10	1.85	1.85	.185	.185	—	—	—
Carpenters	1	2	10	10	1.85	1.95	.185	.195	+	.10	5.40
Coremakers	1	3	9	10	2.20	1.433	.224	.143	—	.767	34.83
Cupola tenders	1	1	10	10	2.25	2.25	.225	.225	—	—	—
Draftsmen	1	1	10	10	1.75	1.75	.175	.175	—	—	—
Engineers	4	4	10.6	10.37	2.59	2.212	.216	.213	—	.068	2.98
Erectors	—	7	—	10	—	2.071	—	.207	—	—	—
Firemen	2	1	10	10	1.835	1.85	.184	.185	+	.015	.82
Foremen	3	1	10	10	4.22	4.00	.422	.40	—	.22	5.21
Founders	9	10	9	10	1.606	1.57	.178	.157	—	.036	2.21
Furnace tenders	6	7	10	10	1.933	1.793	.193	.179	—	.14	7.24
Galvanizers	3	3	10	10	1.90	1.60	.19	.19	—	—	—
Helpers	172	175	9.95	9.92	1.614	1.683	.162	.169	—	.069	4.23
Laborers	50	38	9.88	10	1.748	1.50	.178	.15	—	.248	1.42
Machine operators	3	7	10	10	2.25	1.986	.225	.198	—	.261	11.73
Machinists	68	53	10	10	2.38	2.352	.238	.235	—	.028	1.18
Machinists' helpers	—	5	—	10	—	1.78	—	.178	—	—	—
Molders	13	15	9	10	2.70	2.957	.50	.25	+	.257	9.52
Painters	4	3	10	10	1.912	2.167	.191	.216	+	.255	13.31
Pattern makers	5	7	10	10	2.60	2.571	.26	.257	—	.029	1.12
Picklers	1	1	10	10	1.95	1.80	.195	.18	—	.15	7.69
Plumbers	2	1	10	10	2.50	3.00	.25	.30	+	.50	20.00
Rivet heaters	6	8	10	10	1.083	.925	.108	.092	—	.158	14.59
Sheet-iron workers	5	7	10	10	1.85	1.935	.185	.193	+	.085	4.59
Shopmen	—	61	—	10	—	1.49	—	.149	—	—	—
Shipping clerks	2	—	10	—	1.575	—	.157	—	—	—	—
Steam fitters	6	8	10	10	2.125	2.175	.212	.217	+	.05	2.35
Tallymen	1	1	10	10	2.10	2.10	.21	.21	—	—	—
Teamsters	4	4	10	10	1.761	1.70	.176	.17	—	.061	3.46
Testers	—	1	—	10	—	2.00	—	.20	—	—	—
Timekeepers	2	1	10	10	1.75	2.50	.175	.25	+	.75	42.86
Tinners	1	1	10	10	2.35	2.50	.235	.25	+	.15	6.8
Watchmen	5	3	10.8	10.37	1.69	1.783	.156	.173	—	.093	5.5
Wood workers	19	10	10	10	1.88	1.83	.188	.183	—	.05	2.63
Total and av.	653	701	9.84	9.95	1.998	1.969	.203	.198	—	.029	1.45

TABLE VII—CLASSIFICATION OF DAILY WAGES.

Classified daily wages, (inclusive).	Total number of persons employed.						Average wages per day.					
	Male.		Female.		Total.		Male.		Female.		Total.	
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.
\$0.50 to \$0.58.	1	.....	.....	.....	1	.....	\$0.50	.....	.....	.....	\$0.50	.....
.75 to .83.	3	2	.....	.....	3	2	.75	0.75	.....	.....	.75	\$0.75
.84 to .91.	1	7	.....	.....	1	7	1.00	.864	.....	.....	.90	.864
1.00 to 1.08.	24	26	.....	.....	24	26	1.00	1.00	.....	.....	1.00	1.00
1.09 to 1.16.	1	1	.....	.....	1	1	1.10	1.10	.....	.....	1.10	1.10
1.25 to 1.33.	14	20	.....	.....	14	20	1.25	1.25	.....	.....	1.25	1.25
1.34 to 1.41.	14	18	.....	.....	14	18	1.39	1.376	.....	.....	1.39	1.376
1.50 to 1.58.	78	95	.....	.....	78	95	1.50	1.50	.....	.....	1.50	1.50
1.59 to 1.63.	51	81	.....	.....	51	81	1.61	1.623	.....	.....	1.61	1.623
1.67 to 1.74.	34	9	.....	.....	34	9	1.699	1.70	.....	.....	1.699	1.70
1.75 to 1.83.	109	110	.....	.....	109	110	1.757	1.758	.....	.....	1.757	1.758
1.84 to 1.91.	17	16	.....	.....	17	16	1.852	1.858	.....	.....	1.852	1.858
1.92 to 1.99.	3	1	.....	.....	3	1	1.93	1.95	.....	.....	1.93	1.95
2.00 to 2.08.	86	84	.....	.....	86	84	2.00	2.00	.....	.....	2.00	2.00
2.09 to 2.16.	12	16	.....	.....	12	16	2.116	2.117	.....	.....	2.116	2.117
2.17 to 2.24.	2	2	.....	.....	2	2	2.20	2.20	.....	.....	2.20	2.20
2.25 to 2.33.	47	65	.....	.....	47	65	2.251	2.25	.....	.....	2.251	2.25
2.34 to 2.41.	6	4	.....	.....	6	4	2.358	2.362	.....	.....	2.358	2.362
2.50 to 2.58.	40	35	.....	.....	40	35	2.50	2.50	.....	.....	2.50	2.50
2.59 to 2.66.	24	20	.....	.....	24	20	2.615	2.61	.....	.....	2.615	2.61
2.67 to 2.74.	1	1	.....	.....	1	1	2.70	2.68	.....	.....	2.70	2.68
2.75 to 2.83.	14	10	.....	.....	14	10	2.75	2.75	.....	.....	2.75	2.75
2.84 to 2.91.	11	8	.....	.....	11	8	2.856	2.85	.....	.....	2.856	2.85
2.92 to 2.99.	.....	1	.....	.....	.....	1	.....	2.94	.....	.....	.....	2.94
3.00 to 2.08.	32	33	.....	.....	32	33	3.00	3.00	.....	.....	3.00	3.00
3.09 to 3.16.	.....	2	.....	.....	.....	2	.....	3.10	.....	.....	.....	3.10
3.17 to 3.24.	1	.....	.....	.....	1	.....	3.20	.....	.....	.....	3.20	.....
3.25 to 3.33.	18	23	.....	.....	18	23	3.297	3.312	.....	.....	3.297	3.312
3.50 to 3.58.	4	5	.....	.....	4	5	3.50	3.502	.....	.....	3.50	3.502
3.75 to 3.83.	1	.....	.....	.....	1	.....	3.75	.....	.....	.....	3.75	.....
4.00 to 4.08.	1	4	.....	.....	1	4	4.00	4.00	.....	.....	4.00	4.00
4.25 to 4.33.	1	1	.....	.....	1	1	4.25	4.25	.....	.....	4.25	4.25
5.00 to 5.08.	1	1	.....	.....	1	1	5.00	5.00	.....	.....	5.00	5.00
5.75 to 5.83.	1	.....	.....	.....	1	.....	5.77	.....	.....	.....	5.77	.....
Total	653	701	.....	.....	653	701	1.998	1.969	.....	.....	1.998	1.969

Remarks.—The tables show few changes in this industry for 1905. On the whole there was a moderate growth, as is evidenced by the increase of 1 per cent. in the capital invested, of 7 per cent. in the average number of persons employed, of 7 per cent. in the value of materials used, of 12 per cent. in the amount paid in wages and salaries, and of 7 per cent. in the value of the total output. There was less variation in employment in 1905, the maximum of unemployment for that year being only 11 per cent. as against 18 per cent. for 1904. There was a slight decrease in the average daily wages paid—between 1 per cent. and 2 per cent. Woodworkers, rivet heaters, machine operators, and furnace tenders, were the largest classes of employees affected by this decrease. No women were employed in this industry.

7. BOOTS AND SHOES—27 ESTABLISHMENTS.

TABLE I—MANAGEMENT AND OPERATION.

Classification.	Number in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Number of private firms	6	6	.....	.....
Number of male partners	18	12	— 6	33.33
Number of female partners .....	.....	.....	.....	.....
Total number of partners	18	12	— 6	33.33
Number of corporations	21	21	.....	.....
Number of male stockholders	322	340	+ 18	5.59
Number of female stockholders	48	50	+ 2	4.17
Total number of stockholders	370	390	+ 20	5.41
Total number of partners and stockholders	388	402	+ 14	3.61
Smallest number of persons employed	2,248	2,220	— 28	1.25
Greatest number of persons employed	2,398	2,482	+ 84	3.50
Average number of persons employed	2,336	2,383	+ 47	2.01
Average days in operation	283	283	.....	.....

TABLE II—INVESTMENT.

Classification.	Capital invested in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Land	\$64,667 50	\$64,501 20	— \$166 30	0.26
Buildings and fixtures	379,584 01	381,801 83	+ 2,217 82	0.58
Machinery, etc.	367,993 87	411,249 95	+ 43,2 6 08	11.75
Cash and other capital	1,843,517 22	1,825,015 94	— 18,501 28	1.00
Total	2,655,762 60	2,682,568 92	+ 26,806 32	1.01

TABLE III A—VALUE OF MATERIALS AND LABOR EMPLOYED, AND OF PRODUCT.

Classification.	Value of material used, wages and salaries paid in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Raw material used	\$2,885,632 32	\$3,130,188 06	+ \$244,556 74	8.48
Other material used	225,482 27	251,324 88	+ 25,842 11	11.46
Wages	866,714 17	943,172 54	+ 76,458 37	8.82
Salaries	199,352 51	213,182 69	+ 13,831 18	6.94
Profit and minor expenses	373,831 29	403,351 65	+ 29,520 36	7.90
Goods made and work done	4,551,011 56	4,941,220 32	+ 390,208 76	8.57

TABLE III B—ANALYSIS OF TABLE III A.

Classification.	1904.	1905.
Value of goods made and work done (gross product)	\$4,551,011 56	\$4,941,220 32
Value of stock used and other material consumed in production	3,111,113 59	3,381,512 44
Industry product (gross product less value of stock and material)	1,439,897 97	1,559,707 88
Wages and salaries (Labor's direct share of product)	1,036,066 68	1,156,356 83
Profit and minor expenses fund (industry product less wages)	373,831 26	403,351 65
Percentage of industry product paid in wages	Per cent. 74.04	Per cent. 74.14
Percentage of industry product devoted to profit and minor expenses	25.96	25.86

TABLE IV—AVERAGE CAPITAL, ETC., PER EMPLOYEE.

Classification.	Average capital, product and yearly earnings in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent.
Average capital per employee	\$1,136 88	\$1,125 71	— \$11 17	0.98
Average product per employee	1,948 21	2,073 53	+ 125 32	6.43
Average yearly earnings	371 02	395 79	+ 24 77	6.63

TABLE V—RANGE OF EMPLOYMENT AND OF UNEMPLOYMENT.

Months.	Total no. of persons employed in		Percentages of			
			Employment in		Unemployment in	
	1904.	1905	1904.	1905.	1904.	1905
January	2,378	2,395	99.17	93.50	0.33	3.50
February	2,388	2,430	99.53	97.91	0.42	2.09
March	2,354	2,400	98.17	96.70	1.83	3.33
April	2,327	2,313	97.04	93 19	2.96	6.81
May	2,289	2,220	95.46	89.44	4.54	10.56
June	2,326	2,325	97.00	93.67	3.00	6.33
July	2,248	2,350	93.75	94.68	6.25	5.32
August	2,315	2,391	96.54	96.33	3.46	3.67
September	2,344	2,431	97.75	97.95	2.25	2.05
October	2,324	2,464	96.92	99.28	3.08	0.72
November	2,346	2,400	97.83	96.70	2.17	3.30
December	2,398	2,482	100.—	100.—	.....	.....
Average	2,336	2,333	97.41	96.01	2.59	3.99

TABLE VI—OCCUPATIONS AND WAGES OF EMPLOYEES.

Occupations.	Total no. of persons.		Average hours per day.		Average wages per day.		Average wages per hour.		Increase +, or decrease, —, per day in 1905.		
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	Amt.	P. r ct.	
Apprentices	36	9	10.00	10.00	\$.786	\$.722	\$.079	\$.072	—	\$.064	8.14
Bottomers	263	239	9.98	10.00	1.874	1.716	.183	.172	—	.158	8.43
Box makers	1	1	10.00	10.00	1.67	1.67	.167	.167			
Carpenters		1	10.00	10.00		2.25		.225			
Clerks, female	2	2	10.00	10.00	1.875	1.80	.188	.189	—	.075	4.00
Cutters	184	223	9.91	9.93	2.106	1.966	.213	.197	—	.147	6.65
Cutters, female	7	5	10.00	10.00	1.006	1.784	.101	.178	+	.778	77.34
Edge setters	40	31	9.99	9.98	1.775	1.45	.178	.145	—	.325	18.31
Engineers	3	1	10.00	10.00	1.83	2.50	.183	.250	+	.610	34.41
Finishers	40	14	10.00	10.00	1.987	1.833	.199	.183	—	.154	7.75
Finishers, female	6	6	10.00	10.00	.65	.67	.065	.067	+	.020	3.08
Fitters	20	4	9.55	10.00	1.708	2.053	.175	.205	+	.315	20.20
Fitters, female	24	18	10.00	10.00	.927	.871	.093	.087	—	.056	6.04
Folders, female	1	2	10.00	10.00	1.20	1.45	.120	.145	+	.250	20.83
Foremen	14	25	9.96	9.98	3.236	3.124	.323	.312	—	.112	3.46
Forewomen	6	7	9.92	9.93	1.487	1.519	.150	.153	+	.032	2.15
Hand workers	70		10.00	10.00	1.80		.180				
Heelers	20	17	10.00	10.00	1.694	1.791	.169	.179	+	.097	5.73
Helpers	264	282	9.84	9.84	.845	.799	.085	.081	—	.046	5.44
Helpers, female	55	72	9.89	9.65	.725	.621	.073	.064	—	.104	14.34
Laborers	6	14	10.00	10.00	1.62	1.399	.162	.140	—	.221	13.64
Lasters	191	186	9.86	9.92	1.719	1.60	.174	.162	—	.11	6.69
Levelers	2	2	10.00	10.00	1.75	1.93	.175	.193	+	.180	10.29
Machine operators	124	140	9.81	9.88	1.102	1.902	.114	.193	—	.200	9.51
Machine operators, female	113	118	9.73	9.50	1.109	1.096	.114	.114	—	.013	1.17
Machinists	2	7	10.00	10.00	2.75	2.151	.275	.215	—	.539	21.78
Markers, female	3		10.00	10.00	.83		.083				
Packers	7	11	10.00	10.00	.929	1.439	.093	.144	+	.510	54.90
Packers, female	44	35	9.78	9.97	.882	.729	.090	.075	—	.153	17.35
Pattern makers	1	1	10.00	10.00	2.50	2.50	.250	.250			
Polishers	3	6	9.50	9.67	1.25	1.375	.125	.142	+	.125	10.00
Shipping clerks	6	5	9.83	9.80	1.492	1.59	.152	.162	+	.098	6.57
Shipping clerks, female	2	1	9.75	9.50	1.575	1.15	.162	.121	—	.425	26.93
Shoemakers	184	276	9.85	9.75	1.916	1.996	.195	.205	+	.080	4.18
Skinner, female	2		10.00	10.00	.75		.075				
Sole leather workers	6		10.00	10.00	1.583		.158				
Sorters, female		2	10.00	10.00		.835		.084			
Stampers	1		10.00	10.00	.83		.083				
Stampers, female	1	1	10.00	10.00	.42	.42	.042	.042		.000	
Stitchers	16	20	10.00	10.00	1.374	1.188	.137	.119	—	.188	13.68
Stitchers, female	553	604	9.22	9.88	1.111	1.052	.120	.105	—	.059	5.31
Stockmen	2	4	10.00	10.00	2.50	1.72	.250	.172	—	.780	31.20
Sweepers	1	3	10.00	10.00	.67	.75	.067	.075	+	.080	11.94
Table workers, female	59	55	9.71	9.95	.599	.675	.062	.063	+	.076	12.69
Teamsters	1	1	5.00	6.00	1.50	1.80	.300	.300	+	.300	20.00
Treers	1	1	10.00	10.00	1.67	1.67	.167	.167		.000	
Trimmers	9	8	9.94	9.94	1.658	2.094	.167	.211	+	.436	26.20
Vampers, female	1		10.00	10.00	1.00		.100				
Warehousemen	1	5	10.00	10.00	1.00	1.356	.100	.136	+	.356	35.60
Watchmen	3	4	10.67	10.50	1.64	1.488	.154	.142	—	.152	9.27
Total and average	2,401	2,469	9.88	9.87	1.45	1.397	.147	.142	—	.053	3.63

TABLE VII—CLASSIFICATION OF DAILY WAGES.

Classified daily wages, (inclusive).	Total number of persons employed.						Average wages per day.					
	Male.		Female.		Total.		Male.		Female.		Total.	
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.
\$0.33 or less..	1	.....	6	7	7	7	\$0.33	.....	\$0.33	\$0.33	\$0.33	\$0.33
.34 to \$0.41..	1	.....	4	2	5	2	.40	.....	.358	.35	.363	.35
.42 to .49..	4	12	8	17	12	29	.43	\$0.43	.425	.422	.427	.421
.50 to .58..	26	29	57	82	83	111	.536	.528	.524	.518	.528	.521
.59 to .66..	.....	14	28	18	28	32	.....	.629	.624	.642	.624	.636
.67 to .74..	.....	29	32	40	61	68	.....	.689	.683	.67	.631	.679
.75 to .82..	109	178	177	219	346	397	.....	.757	.762	.767	.774	.762
.84 to .91..	.....	.....	16	38	16	38	.....	.....	.864	.861	.864	.851
.92 to .99..	36	37	56	57	92	94	.....	.949	.945	.942	.932	.937
1.00 to 1.03..	63	81	95	176	158	257	.....	1.007	1.01	1.012	1.007	1.01
1.09 to 1.16..	42	41	31	22	73	63	.....	1.112	1.112	1.118	1.105	1.114
1.17 to 1.24..	14	19	58	36	72	55	.....	1.118	1.181	1.185	1.188	1.184
1.25 to 1.32..	99	91	209	68	308	159	.....	1.261	1.261	1.253	1.273	1.257
1.34 to 1.41..	40	64	9	31	49	95	.....	1.379	1.378	1.389	1.39	1.381
1.42 to 1.49..	6	42	3	3	9	45	.....	1.433	1.445	1.443	1.44	1.437
1.50 to 1.58..	110	120	42	35	152	155	.....	1.502	1.503	1.501	1.50	1.502
1.59 to 1.63..	71	13	10	1	81	14	.....	1.642	1.637	1.645	1.61	1.642
1.67 to 1.74..	57	107	9	6	66	113	.....	1.671	1.673	1.67	1.67	1.672
1.75 to 1.83..	86	119	6	4	92	165	.....	1.77	1.77	1.758	1.751	1.771
1.84 to 1.91..	4	14	1	2	5	16	.....	1.86	1.87	1.86	1.90	1.86
1.92 to 1.99..	2	.....	.....	4	2	6	.....	1.935	1.935	.....	1.943	1.935
2.00 to 2.08..	327	309	16	12	343	221	.....	2.001	2.013	2.00	2.00	2.01
2.09 to 2.16..	1	30	.....	1	1	31	.....	2.10	2.157	.....	2.10	2.10
2.17 to 2.24..	18	23	1	.....	19	23	.....	2.184	2.176	2.22	.....	2.183
2.25 to 2.33..	78	39	.....	3	78	42	.....	2.26	2.283	.....	2.277	2.26
2.34 to 2.41..	21	7	.....	.....	21	7	.....	2.352	2.38	.....	.....	2.352
2.42 to 2.49..	.....	1	.....	1	.....	2	.....	.....	2.42	.....	2.42	.....
2.50 to 2.58..	151	127	4	.....	155	127	.....	2.50	2.501	2.50	.....	2.50
2.59 to 2.66..	.....	8	.....	.....	.....	8	.....	.....	2.65	.....	.....	.....
2.67 to 2.74..	1	3	.....	.....	1	3	.....	.....	2.67	.....	.....	2.67
2.75 to 2.83..	18	16	1	.....	19	16	.....	2.759	2.75	2.75	.....	2.759
2.84 to 2.91..	.....	3	.....	1	.....	4	.....	.....	2.88	.....	2.85	.....
2.92 to 2.99..	1	13	.....	.....	1	13	.....	2.93	2.948	.....	.....	2.93
3.00 to 3.08..	21	12	.....	.....	21	12	.....	3.011	3.00	.....	.....	3.011
3.09 to 3.16..	.....	2	.....	.....	.....	2	.....	.....	3.10	.....	.....	.....
3.17 to 3.24..	.....	2	.....	.....	.....	2	.....	.....	3.19	.....	.....	.....
3.25 to 3.33..	8	6	.....	.....	8	6	.....	3.308	3.327	.....	.....	3.308
3.50 to 3.58..	9	15	.....	.....	9	15	.....	3.50	3.50	.....	.....	3.50
3.59 to 3.66..	.....	2	.....	.....	.....	2	.....	.....	3.645	.....	.....	.....
3.67 to 3.74..	1	1	.....	.....	1	1	.....	3.67	3.67	.....	.....	3.67
3.75 to 3.83..	.....	1	.....	.....	.....	1	.....	.....	3.77	.....	.....	.....
4.00 to 4.08..	.....	1	.....	.....	.....	1	.....	.....	4.00	.....	.....	.....
4.09 to 4.16..	.....	1	.....	.....	.....	1	.....	.....	4.13	.....	.....	.....
4.17 to 4.24..	2	2	.....	.....	2	2	.....	4.17	4.19	.....	.....	4.17
4.25 to 4.33..	1	1	.....	.....	1	1	.....	4.28	4.25	.....	.....	4.28
4.50 to 4.58..	.....	1	.....	.....	.....	1	.....	.....	4.50	.....	.....	.....
4.75 to 4.83..	.....	1	.....	.....	.....	1	.....	.....	4.80	.....	.....	4.80
4.92 to 4.99..	.....	1	.....	.....	.....	1	.....	.....	4.95	.....	.....	.....
5.84 to 5.91..	.....	1	.....	.....	.....	1	.....	.....	5.84	.....	.....	.....
6.75 to 6.83..	.....	1	.....	.....	.....	1	.....	.....	6.77	.....	.....	.....
8.00 to 8.08..	.....	1	.....	.....	.....	1	.....	.....	8.08	.....	.....	.....
8.42 to 8.49..	.....	1	.....	.....	.....	1	.....	.....	8.42	.....	.....	.....
8.59 to 8.66..	.....	1	.....	.....	.....	1	.....	.....	8.59	.....	.....	.....
11.00 to 11.08..	.....	1	.....	.....	.....	1	.....	.....	11.03	.....	.....	.....
Total	1,522	1,541	879	929	2,401	2,469	1.66	1.641	1.035	.991	1.45	1.397

Remarks.—This industry, one of the most important in the state, is seen to have experienced a steady growth for the years 1904 and 1905. For those establishments which reported, there was an increase of nearly 12 per cent. in 1905, in the amount invested in machinery, and of about 1 per cent. in the total capital invested. Two per cent. more persons were employed, and there was an increase of about 9 per cent. in the materials used, the wages and salaries paid, and the output. The product per employee also increased 6 per cent., and the average yearly earnings 7 per cent. Employment was very steady throughout each year, being in no month far from the maximum. Seventy-four per cent. of the value of the industry product, a high proportion, was paid in wages and salaries each year. Women were employed in many of the lighter and in several of the more specialized occupations. A number held the responsible positions of forewomen or of shipping clerks. Almost without exception the wages of women were lower than those of men engaged in the same occupations. The proportion of female help employed increased slightly in 1905. There was also an inconsiderable increase in their average hours of labor. In spite of this fact there was a decrease of about 4 per cent. in the average daily wages paid. In the case of the male employees, both the hours of labor and the daily wages paid showed a decrease.

8. BOXES, (PACKING)—20 ESTABLISHMENTS.

TABLE I—MANAGEMENT AND OPERATION.

Classification.	Number in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent.
Number of private firms.....	11	9	— 2	18.18
Number of male partners.....	19	15	— 4	21.05
Number of female partners.....	1	2	+ 1	100.—
Total number of partners.....	20	17	— 3	15.00
Number of corporations.....	9	11	+ 2	22.22
Number of male stockholders.....	46	46	.....	.....
Number of female stockholders.....	6	8	+ 2	33.33
Total number of stockholders.....	52	54	+ 2	3.85
Total number of partners and stockholders..	73	71	— 1	1.30
Smallest number of persons employed.....	732	763	+ 31	4.24
Greatest number of persons employed.....	969	991	+ 22	2.27
Average number of persons employed.....	832	897	+ 65	7.81
Average days in operation.....	250	270	+ 20	8.00

TABLE II—INVESTMENT.

Classification.	Capital invested in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Land	\$151,050 00	\$159,285 10	+ \$8,235 10	5.45
Buildings and fixtures.....	91,218 53	95,476 61	+ 4,258 08	4.67
Machinery, etc.	173,891 98	189,406 44	+ 15,514 46	8.92
Cash and other capital.....	495,627 45	604,147 27	+ 108,519 82	21.90
Total	\$911,787 96	\$1,048,315 42	+ \$136,527 46	14.97

TABLE III A—VALUE OF MATERIAL AND LABOR EMPLOYED, AND OF PRODUCT.

Classification.	Capital invested in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent.
Raw material used.....	\$896,870 70	\$959,589 03	+ \$62,718 33	6.99
Other material used.....	89,945 42	85,396 42	+ 4,451 00	5.50
Wages	302,503 32	325,730 48	+ 23,227 16	7.68
Salaries	41,436 00	43,550 77	+ 2,114 77	5.10
Profit and minor expenses....	279,081 58	318,888 42	+ 39,806 84	14.27
Goods made and work done..	\$1,600,837 02	\$1,733,155 12	+ \$132,318 10	8.27

TABLE III B—ANALYSIS OF TABLE III A.

Classification.	1904.	1905.
Value of goods made and work done (gross product)	\$1,600,837 02	\$1,733,155 12
Value of stock used and material consumed in production	977,816 12	1,044,935 45
Industry products (gross production less value of stock and material)	623,020 90	688,169 67
Wages and salaries (Labor's direct share of product)	343,939 32	369,281 25
Profit and minor expense fund (industry product less wages)	279,081 58	318,888 42
	Per cent.	Per cent.
Percentage of industry product paid in wages.....	55.21	53.66
Percentage of industry product devoted to profit and minor expenses	44.79	46.34

TABLE IV—AVERAGE CAPITAL, ETC., PER EMPLOYEE.

Classification.	Average capital, product and yearly earnings in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent.
Average capital per employee	\$1,095 90	\$1,168 69	+ \$72 79	6.64
Average product per employee.....	1,924 08	1,932 17	+ 8 09	0.42
Average yearly earnings	363 59	363 13	— 0 46	0.13

TABLE V—RANGE OF EMPLOYMENT AND OF UNEMPLOYMENT.

Months.	Total no. of persons employed in		Percentage of			
	1904.	1905.	Employment in		Unemployment in	
			1904.	1905.	1904.	1905.
January	732	763	75.54	76.99	24.46	23.01
February	753	785	77.71	79.21	22.29	20.79
March	794	878	81.94	88.60	18.06	11.40
April	851	910	87.82	91.83	12.18	8.17
May	841	939	86.79	94.75	13.21	5.25
June	879	991	90.71	100.—	9.29	.....
July	923	950	95.25	95.86	4.75	4.14
August	969	957	100.00	96.57	.....	3.43
September	849	890	87.62	89.81	12.38	10.19
October	812	892	83.80	90.01	16.20	9.99
November	795	904	83.04	91.22	17.93	8.78
December	785	904	81.01	91.22	18.99	8.78
Average	832	897	85.86	90.52	14.14	9.48

TABLE VI—OCCUPATIONS AND WAGES OF EMPLOYEES.

Occupations.	Total no. of persons.		Average hours p r day.		Average wages per day.		Average wages per hour.		Increase, +, or decrease, —, per day in 1905.	
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	Amt.	Per ct.
Balers	1	1	10	10	\$1.75	\$1.75	\$.175	\$.175	—	—
Basket makers	17	22	10	10	1.87	1.832	.187	.183	—	\$.041
Box makers	20	30	9.60	9.50	1.993	1.33	.238	.139	—	.673
Boys	45	3	10	10	.85	.625	.086	.063	—	.231
Carpenters	1	1	10	10	2.00	3.00	.20	.30	+	1.00
Coopers	3	4	10	10	1.53	1.912	.153	.191	+	.379
Engineers	6	8	10	10	2.222	2.163	.222	.216	—	.059
Filets	7	8	10	10	2.78	2.469	.279	.247	—	.317
Firemen	7	4	10.14	10	1.664	2.07	.164	.207	+	.406
Foremen	20	25	10	10	2.655	2.857	.265	.286	+	.202
Helpers	191	116	10	10	.911	.91	.091	.091	—	.001
Helpers, female	7	11	10	10	.70	.682	.07	.063	—	.018
Laborers	456	547	9.98	9.96	1.30	1.295	.131	.132	—	.011
Machinists	10	11	10	10	2.61	2.18	.231	.218	—	.43
Machine tenders	59	54	10	10	1.552	.149	.155	.149	—	.032
Millwrights	1	2	10	10	2.50	2.25	.25	.225	—	.25
Nailers	6	9	10	8.89	1.50	2.194	.15	.247	+	.694
Sawyers	80	95	10	9.35	1.908	1.682	.191	.171	—	.236
Shipping clerks	4	2	10	10	1.75	2.125	.175	.175	—	—
Sorters	3	—	10	—	1.832	—	.183	—	—	—
Stitchers, female	2	4	10	10	1.00	.75	.10	.075	—	.25
Tallymen	2	3	10	10	2.25	2.00	.225	.20	—	.25
Teamsters	11	19	10	10	1.856	1.632	.186	.166	—	.194
Watchmen	7	5	11	10.40	1.493	.151	.149	.141	+	.047
Total and av.	966	980	9.99	9.95	1.366	1.392	.137	.140	+	.023

TABLE VII—CLASSIFICATION OF DAILY WAGES.

Classified daily wages, (inclusive).	Total number of persons employed.						Average wages per day.					
	Male.		Female.		Total.		Male.		Female.		Total.	
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.
\$.34 to \$.41...	2				2							
.42 to .49...	6				6							
.50 to .58...	23	16			23	16						
.59 to .66...	33	13	6	10	39	23	.614	.616	\$.65	\$.65	.62	.637
.67 to .74...	3	16			3	16	.70	.681			.70	.651
.75 to .83...	131	126		4	131	130	.752	.773		.75	.752	.772
.84 to .91...	21	8			21	8	.855	.839			.855	.869
.92 to .99...	1				1		.95				.95	
1.00 to 1.03...	82	81	3	1	85	82	1.09	1.00	1.00	1.00	1.00	1.00
1.09 to 1.16...	18	15			18	15	1.143	1.143			1.143	1.143
1.17 to 1.24...		1				1		1.20				1.20
1.25 to 1.33...	96	154			96	154	1.252	1.256			1.252	1.256
1.34 to 1.41...	98	53			98	53	1.38	1.371			1.38	1.371
1.42 to 1.49...	6	4			6	4	1.45	1.45			1.45	1.45
1.50 to 1.58...	152	238			152	238	1.50	1.50			1.50	1.50
1.59 to 1.66...	43	53			43	53	1.607	1.615			1.607	1.615
1.67 to 1.74...	2	3			2	3	1.70	1.68			1.70	1.63
1.75 to 1.83...	104	67			104	67	1.754	1.756			1.754	1.753
1.84 to 1.91...	6	22			6	22	1.892	1.861			1.892	1.861
2.00 to 2.08...	52	37			52	37	2.00	2.002			2.00	2.002
2.09 to 2.16...	1				1		2.16				2.16	
2.17 to 2.24...	1				1		2.20				2.20	
2.25 to 2.33...	38	18			38	18	2.252	2.25			2.252	2.25
2.34 to 2.41...	19	17			19	17	2.50	2.50			2.50	2.50
2.42 to 2.58...	1	1			1	1	2.67	2.67			2.67	2.67
2.67 to 2.74...	1	1			1	1	2.767	2.757			2.767	2.755
2.75 to 2.83...	5	10			5	10	2.89	2.877			2.89	2.877
2.84 to 2.91...	2	3			2	3	3.00	3.00			3.00	3.00
3.00 to 3.08...	7	11			7	11	3.00	3.00			3.00	3.00
3.17 to 3.24...		1				1		3.20				3.20
3.25 to 3.33...	1	1			1	1	3.25	3.25			3.25	3.25
3.34 to 3.41...		1				1		3.40				3.40
3.50 to 3.58...	1				1		3.50				3.50	
3.59 to 3.66...	1	1			1	1	3.60	3.60			3.60	3.60
4.25 to 4.33...	1	1			1	1	4.25	4.25			4.25	4.25
4.50 to 4.58...		1				1		4.50				4.50
6.00 to 6.08...		1				1		6.00				6.00
Total and av.	957	974	9	15	966	989	1.374	1.403	.767	.70	1.363	1.392

Remarks.—The manufacture of packing boxes shows an increase for 1905, commensurate with the greater demand occasioned by the growth of the other manufacturing industries of the state. The tables show that the capital invested, the value of the materials used, the total output, the wages and salaries paid, the number of days of operation, and the average number of persons employed, all increased to the extent of from 7 to 15 per cent. There was a wide range of employment, the unemployment sometimes reaching as high a percentage as 24 per cent. January and February of each year were the months of least activity in this industry. Women were employed only in the minor occupations,—as helpers and stitchers. Sixty-seven

per cent. more were employed in 1905 than in 1904. The additional number were paid lower wages than the average wages for female help in 1904, and in consequence the average wages for women decreased from 77 cents to 70 cents for 1905. No change occurred in their hours of labor. On the other hand, the hours for men were somewhat less in 1905, while their wages increased about 2 per cent.

9. BOXES, (PAPER AND CIGAR)—12 ESTABLISHMENTS.

TABLE I—MANAGEMENT AND OPERATION.

Classification.	Number in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Number of private firms	5	6	+ 1	20.—
Number of male partners	7	9	+ 2	28.57
Number of female partners	1	1	.....	.....
Total number of partners	8	10	+ 2	25.—
Number of corporations	7	6	— 1	14.29
Number of male stockholders	29	26	— 3	10.34
Number of female stockholders	7	8	+ 1	14.29
Total number of stockholders	36	34	— 2	5.56
Total number of partners and stockholders	44	44	.....	.....
Smallest number of persons employed	709	739	+ 30	4.23
Greatest number of persons employed	846	893	+ 47	5.56
Average number of persons employed	802	791	— 11	1.37
Average days in operation	293	299	+ 6	2.05

TABLE II—INVESTMENT.

Classification.	Capital invested in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Land	\$97,221 07	\$117,347 51	+ \$20,126 44	20.70
Buildings and fixtures	181,420 02	198,372 63	+ 16,952 61	9.34
Machinery, etc.	175,269 02	187,121 27	+ 11,852 25	6.76
Cash and other capital	410,871 49	417,607 51	+ 6,736 02	1.64
Total	\$864,781 00	\$920,448 92	+ \$55,667 32	6.44

TABLE III A—VALUE OF MATERIALS AND LABOR EMPLOYED, AND OF PRODUCT.

Classification.	Value of material used, wages and salaries paid in		Increase, +, or decrease, -, in 1905.	
	1904.	1905.	Amount.	Per cent
Raw material used	\$542,925 54	\$539,615 57	- \$10,309 97	1.87
Other material used	35,358 04	35,863 25	+ 505 21	1.43
Wages	229,361 35	223,635 20	- 5,726 15	2.50
Salaries	56,425 48	56,509 00	+ 83 52	0.15
Profit and minor expenses....	127,226 91	115,389 16	- 11,837 75	9.30
Goods made and work done .	998,297 32	971,012 18	- 27,285 14	2.73

TABLE III B—ANALYSIS OF TABLE III A.

Classification.	1904.	1905.
Goods made and work done (gross production).....	\$998,297 32	\$971,012 18
Value of stock used and material consumed in production	585,283 58	575,478 82
Industry product (gross production less value of stock and material	413,013 74	395,533 36
Wages and salaries (Labor's direct share of product)	285,786 83	289,144 20
Profit and minor expense fund (industry product less wages)	127,226 91	115,389 16
Percentage of industry product paid in wages.....	Per cent. 69.20	Per cent. 70.83
Percentage of industry product devoted to profit and minor expenses	30.80	29.17

TABLE IV—AVERAGE CAPITAL, ETC., PER EMPLOYEE.

Classification.	Average capital, product and yearly earnings in		Increase, +, or decrease, -, in 1905.	
	1904.	1905.	Amount.	Per cent.
Average capital per employee	\$1,078 28	\$1,163 65	+ \$85 37	7.92
Average product per employee	1,244 76	1,227 58	- 17 18	1.38
Average yearly earnings	285 99	282 72	- 3 27	1.14

TABLE V--RANGE OF EMPLOYMENT AND OF UNEMPLOYMENT.

Months.	Total no. of persons employed in		Percentage of			
			Employment in		Unemployment in	
	1904.	1905.	1904.	1905.	1904.	1905.
January	709	755	83.81	90.64	16.19	9.36
February	738	739	87.23	88.71	12.77	11.29
March	768	747	90.78	89.67	9.22	10.33
April	752	752	88.89	90.28	11.11	9.72
May	810	776	95.75	93.16	4.25	6.84
June	833	785	98.47	94.24	1.53	5.76
July	846	809	100.—	97.12	.....	2.88
August	836	815	98.82	97.84	1.13	2.16
September	831	826	98.23	99.16	1.77	0.84
October	1845	833	99.88	100.—	0.12	.....
November	838	828	99.05	99.40	0.95	0.60
December	823	822	97.28	98.63	2.72	1.37
Average	802	791	94.80	94.95	5.20	5.64

TABLE VI--OCCUPATIONS AND WAGES OF EMPLOYEES.

Occupations.	Total no. of persons.		Average hours per day.		Average wages per day.		Average wages per hour.		Increase, +, or decrease, —, per day in 1905.	
	1904.	1905.	1904	1905	1904.	1905	1904.	1905.	Amt.	Per ct.
	Apprentices	1	10	\$.42
Box makers	114	107	9.86	9.71	\$1.475	1.407	\$.149	-.145	-.068	4.6
Box makers, female	280	300	10	9.99	.777	.816	.078	-.082	+.039	5.02
Boys	14	1	9.43	10	.643	1.00	.068	.10	+.357	55.5
Bronze brushers	2	.....	10	.....	.75	.....	.075	.....	.....	.....
Carpenters	1	2	10	9.5	1.17	1.75	.117	.184	+.58	49.5
Cutters	3	5	10	10	1.056	1.60	.105	.16	+.544	51.5
Dye makers	1	.....	10	.....	2.16	.....	.216	.....	.....	.....
Engineers	2	4	10	9.5	2.01	2.312	.20	.243	+.302	15.00
Feeders	6	16	10	10	1.375	1.475	.137	.147	+.10	7.27
Feeders, female	1	.....	10	.....	.75	.....	.075	.....	.....	.....
Firemen	1	1	10	10	2.20	2.25	.22	.225	+.05	2.27
Foremen	8	7	9.63	9.71	2.398	2.714	.249	.278	+.316	13.17
Forewomen	2	.....	10	.....	1.385	.....	.139	.....	.....	.....
Girls	22	.....	10	.....	.75	.....	.075	.....	.....	.....
Gold leavers	3	.....	10	.....	.67	.....	.067	.....	.....	.....
Helpers	30	57	9.8	9.14	.692	1.00	.07	.109	+.303	44.5
Helpers, female	53	29	9.87	9.6	.687	.59	.069	.061	-.097	14.12
Laborers	95	30	9.32	9.26	1.188	1.442	.12	.156	+.254	21.38
Lumber scaler	2	.....	10	.....	2.175	.....	.217	.....	.....	.....
Machine tenders	50	46	9.32	9.43	1.847	1.807	1.86	.192	-.04	2.13
Machine tenders, female	40	40	10	10	.925	1.125	.092	.112	+.20	21.62
Machinists	7	11	10	10	2.892	2.409	.289	.241	-.483	17.39
Pasters, female .....	.....	58	.....	9.95	.....	.825	.....	.083	.....	.....
Pressmen	10	4	10	10	1.441	2.562	.144	.256	+ 1.121	77.79
Printers	2	2	10	9.5	1.00	2.00	.10	.21	+ 1.00	100.00
Printers' helpers .....	.....	17	.....	10	.....	.535	.....	.053	.....	.....
Sawyers	1	1	9	9	2.00	2.00	.222	.222	.....	.....
Scorers	1	1	10	10	2.50	2.00	.25	.20	-.50	20.00
Shipping clerks	1	.....	10	.....	1.50	.....	.15	.....	.....	.....
Teamsters	6	6	10	9.83	1.641	1.667	.164	.17	+.026	1.58
Trimmers .....	.....	5	.....	10	.....	.70	.....	.07	.....	.....
Trimmers, female	82	40	9.85	10	.695	.75	.072	.075	+.055	7.91
Type setters .....	.....	1	.....	10	.....	2.00	.....	.20	.....	.....
Watchmen	4	3	10.5	10.67	1.487	1.567	.14	.146	+.08	5.32
Total and av.	844	796	9.47	9.79	1.028	1.083	.108	.11	+.055	5.25

TABLE VII—CLASSIFICATION OF DAILY WAGES.

Classified daily wages, (inclusive.)	Total number of persons employed.						Average wages per day.					
	Male.		Female.		Total.		Male.		Female.		Total.	
	1904.	1905.	1904.	1905.	1904.	1905.	1901.	1905.	1904.	1905.	1904.	1905.
\$0.33 or less.			2		2					\$0.275		\$0.275
.34 to .41.			19		19					.40		.40
.42 to .49.		1			2			\$0.42		\$0.42		\$0.42
.50 to .58.	15	21	69	76	84	97	\$0.50	.514	.501	.515	.531	.515
.59 to .66.	18		20	30	38	30	.603		.604	.624	.633	.624
.67 to .74.	23	36	70	103	93	139	.671	.674	.671	.679	.671	.678
.75 to .83.	47	30	190	115	237	145	.774	.80	.775	.786	.775	.789
.84 to .91.			7	10	7	10			.867	.88	.837	.88
.92 to .99.	1		4		5		.95		.957		.956	
1.00 to 1.08.	39	31	51	59	120	90	1.00	1.00	1.00	1.00	1.00	1.00
1.09 to 1.16.	5	1	5	12	9	13	1.11	1.10	1.104	1.10	1.106	1.10
1.17 to 1.24.	4	3	4	4	8	7	1.117	1.17	1.17	1.17	1.173	1.17
1.25 to 1.33.	26	23	7	35	33	58	1.265	1.252	1.261	1.252	1.266	1.254
1.34 to 1.41.	3				3						1.376	
1.42 to 1.49.	1				1		1.45				1.45	
1.50 to 1.58.	53	58	1	2	54	60	1.50	1.50	1.50	1.50	1.50	1.50
1.59 to 1.66.	8	7			5	7	1.635	1.635			1.635	1.632
1.67 to 1.74.	9	6	1		11	7	1.67	1.67	1.67	1.67	1.67	1.67
1.75 to 1.83.	28	29		18	28	47	1.758	1.76		1.75	1.753	1.757
1.84 to 1.91.	7	4			7	4	1.88	1.88			1.88	1.88
2.00 to 2.08.	42	15			42	15	2.00	2.00			2.00	2.00
2.09 to 2.16.	5	8			5	8	2.136	2.12			2.136	2.12
2.17 to 2.24.	1				1		2.20				2.20	
2.25 to 2.33.	3	33			3	33	2.276	2.25			2.276	2.25
2.34 to 2.41.	4				4		2.357				2.357	
2.50 to 2.58.	12	9			12	9	2.50	2.50			2.50	2.50
2.75 to 2.83.	2	4			2	4	2.75	2.75			2.75	2.75
3.00 to 3.08.	5	7			5	7	3.00	3.00			3.00	3.00
3.25 to 3.33.	1	2			1	2	3.33	3.29			3.33	3.29
3.50 to 3.58.	2				2		3.50				3.50	
3.59 to 3.66.	1				1		3.66				3.66	
3.75 to 3.83.		1				1	3.75				3.75	
Total ...	364	329	480	467	844	796	1.389	1.447	.754	.821	1.028	1.083

Remarks.—In spite of an increase of 6 per cent. in the capital invested in this industry there was a decrease of from 2 to 3 per cent. in 1905 in the material used, the total wages paid, and the output. This may have been due to an overstocking of the market in 1904. It is hardly probable that with the increasing use of paper and cigar boxes there was less demand for these articles in the later year. This industry is one carried on chiefly by female labor, as is natural in view of the character of the work required. Men, however, were employed in several of the same occupations as women, and in addition, in such accessory occupations as those of carpenters, engineers, teamsters, watchmen, etc. There were 116 more women than men employed in 1904, and 138 more than men in 1905. The hours of labor for

female help were very slightly shorter for 1905. Their average daily wages increased over 9 per cent. while those of male employes increased about 4 per cent. The low average daily wages for both male and female help each year is accounted for by the fact that a large proportion of the employees in this industry are minors. The percentage of the industry product paid in wages each year was unusually high—about 70 per cent.

10. BRASS GOODS—17 ESTABLISHMENTS.

TABLE I—MANAGEMENT AND OPERATION.

Classification.	Number in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Number of private firms	5	3	— 2	40.—
Number of male partners	6	3	— 3	50.—
Number of female partners	1	.....	— 1	100.—
Total number of partners	7	3	— 4	57.86
Number of corporations.....	12	14	+ 2	16.65
Number of male stockholders.....	102	123	+ 21	20.59
Number of female stockholders.....	42	47	+ 5	11.90
Total number of stockholders.....	144	170	+ 26	18.05
Total number of partners and stockholders..	151	173	+ 22	14.57
Smallest number of persons employed.....	937	1,032	+ 95	10.14
Greatest number of persons employed.....	1,146	1,316	+ 170	14.83
Average number of persons employed.....	1,021	1,160	+ 139	13.61
Average days in operation.....	310	316	+ 6	1.94

TABLE II—INVESTMENT.

Classification.	Capital invested in		Increase, +, or decrease, —, in 1905	
	1904.	1905.	Amount.	Per cent
Land	\$229,183 20	\$285,162 59	+ \$55,979 39	24.43
Buildings and fixtures.....	502,272 97	569,019 02	+ 66,746 05	13.29
Machinery, etc.	471,499 50	542,207 95	+ 70,708 45	15.00
Cash and other capital.....	1,702,391 53	1,575,723 83	— 126,667 70	10.59
Total	\$2,965,347 20	\$2,972,113 39	+ \$6,766 19	0.23

TABLE III A—VALUE OF MATERIALS AND LABOR EMPLOYED, AND OF PRODUCT.

Classification.	Value of material used, wages and salaries paid in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount	Per cent
Raw material used	\$845,297 78	\$1,126,926 55	+ \$281,628 77	33.32
Other material used	210,600 62	223,196 52	+ 12,595 90	5.98
Wages	519,794 41	615,765 39	+ 95,970 98	18.46
Salaries	199,963 53	215,544 82	+ 15,581 24	7.79
Profit and minor expenses...	460,214 28	538,361 51	+ 78,147 23	16.98
Goods made and work done..	\$2,235,870 67	\$2,719,794 79	+ 483,924 12	21 20

TABLE III B—ANALYSIS OF TABLE III A.

Classification.	1904.	1905.
Goods made and work done (gross production).....	\$2,235,870 67	\$2,719,794 79
Value of stock used and material consumed in production	1,055,898 40	1,350,123 07
Industry product (gross production less value of stock and material).....	1,179,972 27	1,369,671 72
Wages and salaries (Labor's direct share of product)	719,757 99	831,310 21
Profit and minor expense fund (industry product less wages)	460,214 28	538,361 51
	Per cent.	Per cent.
Percentage of industry product paid in wages.....	61.00	60.70
Percentage of industry product devoted to profit and minor expenses	39.00	39.30

TABLE IV—AVERAGE CAPITAL, ETC., PER EMPLOYEE.

Classification.	Average capital, product and yearly earnings in		Increase, +, or decrease, —, in 1905.	
	1904.	1905	Amount	Per cent.
Average capital per employee.....	\$2,904 36	\$2,562 17	— \$342 19	11.78
Average product per employee.....	2,189 88	2,344 65	+ 154 77	7.52
Average yearly earnings.....	509 10	530 83	+ 21 73	4.27

TABLE V—RANGE OF EMPLOYMENT AND OF UNEMPLOYMENT.

Months.	Total no. of persons employed in		Percentage of			
	1904.	1905.	Employment in		Unemployment in	
			1904.	1905.	1904.	1905.
January	937	1,032	81.76	78.42	18.24	21.58
February	947	1,036	82.64	78.72	17.36	21.28
March	945	1,125	82.46	85.49	17.54	14.51
April	959	1,080	83.68	82.07	16.32	17.93
May	975	1,062	85.08	80.70	14.92	19.30
June	978	1,124	85.34	85.41	14.66	14.59
July	1,081	1,164	89.97	88.45	10.03	11.55
August	1,061	1,232	92.58	93.62	7.42	6.33
September	1,089	1,271	95.03	96.58	4.97	3.42
October	1,077	1,211	93.98	92.02	6.02	7.93
November	1,104	1,316	96.34	100.—	3.66	0.00
December	1,146	1,263	100.—	95.97	0.00	4.03
Average	1,021	1,160	89.09	81.15	10.91	18.85

TABLE VI—OCCUPATIONS AND WAGES OF EMPLOYEES.

Occupations.	Total no. of persons.		Average hours per day.		Average wages per day.		Average wages per hour.		Increase, +, or decrease, —, per day in 19 5.		
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	Amt.	Per ct.	
Apprentices	70	45	10	9.88	\$.958	\$.648	\$.095	\$.065	—	\$.31	32.36
Assemblers	19		9.53		2.263		.237				
Blacksmiths		2	10			2.25		.225			
Bookkeepers, female	1	1	9.50	7.5	.83	1.00	.087	.133	+	.17	29.48
Carpenters	11	10	10	10	2.272	2.20	.277	.22	—	.072	3.17
Clerks	7	14	9.14	10	2.107	2.107	.23	.21			
Coppersmiths	6	5	8	8	2.733	2.72	.341	.34	—	.011	.40
Coremakers	14	20	9.29	10	1.482	1.625	.159	.162	+	.143	9.65
Coremakers, female	10	8	10	9.62	1.20	1.28	.12	.133	+	.08	6.67
Coremakers, helpers	1	2	10	10	1.00	1.00	.10	.10			
Cutters		1	10			2.60		.20			
Electricians	22	23	0	10	1.977	2.282	.197	.228	+	.305	15.43
Electroplaters	2		0		2.375		.237				
Elevator men		1	10			2.00		.20			
Enamellers	14	18	8	8	1.75	1.75	.219	.219			
Enginemen	9	10	10	11.15	2.26	2.035	.226	.182	—	.225	9.95
Finishers	27	09	9.74	9.81	2.413	2.167	.248	.219	—	.246	10.19
Firemen	6	9	11.33	11.55	1.95	1.894	.172	.164	—	.056	2.87
Fitters	1		9		2.50		.277				
Foremen	4	4	10	10.50	3.062	3.75	.291	.375	+	.688	22.49
Founders	11	6	10	9	2.74	1.85	.185	.205	—	.89	32.48
Furnace tenders	2	3	10	10	1.875	1.897	.187	.183	—	.038	.42
Grinders	2	1	10	10	1.56	2.00	.156	.20	+	.44	28.20
Helpers	113	224	9.74	9.92	1.278	1.504	.131	.151	+	.223	17.68
Helpers, female	50	20	10	10	.884	.99	.088	.099	+	.003	.68
Iron workers	2		10		2.25		.225				
Laborers	308	321	9.92	9.99	1.739	1.587	.159	.158	+	.048	3.01
Lathe hands	25	1	9.20	10	1.80	1.75	.195	.175	—	.05	2.77
Machine tenders	38	58	10	10.19	1.638	1.888	.163	.185	+	.26	15.97
Machinists	180	69	9.98	10	2.228	2.40	.223	.24	+	.172	7.72
Machinists' helpers		10	10		1.56		.153				
Moulders	53	73	9.81	9.92	2.74	2.809	.279	.283	+	.069	2.52
Moulders' helpers	1	1	10	10	1.50	2.00	.15	.20	+	.50	33.33
Packers	9	14	10	10	1.50	1.48	.15	.148	—	.02	1.33
Packers, female		4	10		1.125		.112				
Painters		3	10		1.833		.183				
Pattern makers	13	12	9.84	10	2.461	2.662	.25	.266	+	.201	8.17
Picklers		2	10		1.925		.192				
Platers	1	5	10	10	4.00	2.932	.40	.295	—	1.038	26.70
Plumbers	2	2	9	10	3.25	4.00	.361	.40	+	.75	23.08
Polishers	34	39	9.26	9.95	2.36	2.628	.243	.264	+	.268	11.36
Press hands	6	9	10	10	1.75	1.434	.175	.143	—	.316	18.03
Pump makers		3	10		2.133		.213				
Sheet-iron workers		24	10		1.514		.151				
Shopmen		35	10		1.267		.126				
Solderers	3		10		2.133		.213				
Steam fitters	4	3	10	10	1.825	1.75	.182	.175	—	.075	4.11
Steam fitters' helpers	1		10		1.65		.165				
Teamsters		1	10		1.75		.175				
Testers		4	10		1.307		.13				
Tinners		9	10		2.19		.219				
Toolmakers	9	11	9.66	9.99	2.528	2.95	.261	.295	+	.392	15.53
Valve makers		5	10		2.00		.20				
Watchmen		8	10.87	11.25	2.05	1.776	.188	.158	—	.284	13.65
Winders	12	10	10	10	1.00	1.25	.10	.125	+	.25	25
Wire sewers, female	3	4	10	9	.64	.665	.064	.074	+	.025	3.91
Wire weavers	6	8	10	9	4.30	3.50	.43	.388	—	.80	18.60
Wrappers	7		10		.85		.085				
Total	1,127	1,256	9.88	9.94	1.767	1.821	.181	.183	+	.05	2.82

TABLE VII—CLASSIFICATION OF DAILY WAGES.

Classified daily wages, (inclusive).	Total number of persons em- ployed.						Average wages per day.					
	Male.		Female.		Total.		Male.		Female.		Total.	
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.
\$0.50 to \$0.58..	13	30	.....	3	13	33	\$0.512	\$0.519	.....	\$0.553	\$0.511	\$1.522
.59 to .66..	.....	3	.....	3	.....	.....	.....	0.64	.....	.....	.64	.....
.67 to .74..	13	11	6	.....	18	11	.67	.67	.....	.....	.67	.67
.75 to .83..	17	13	29	.....	46	13	.807	.78	788	.....	.795	.78
.84 to .91..	13	.....	8	.....	13	8	.863	.....	.....	.85	.863	.85
.92 to .99..	.....	5	.....	.....	5	5	.92	.....	.....	.....	.....	.92
1.00 to 1.08..	37	20	11	15	48	35	1.00	1.00	1.00	1.00	1.00	1.00
1.09 to 1.16..	3	.....	.....	.....	3	.....	1.13	.....	.....	.....	1.13	.....
1.17 to 1.24..	4	2	3	.....	7	2	1.17	1.17	1.17	.....	1.17	1.17
1.25 to 1.33..	137	37	10	9	147	46	1.263	1.252	1.25	1.25	1.262	1.252
1.34 to 1.41..	31	7	.....	.....	31	7	1.351	1.392	.....	.....	1.351	1.392
1.50 to 1.58..	183	316	1	1	184	317	1.50	1.50	1.50	1.50	1.50	1.50
1.59 to 1.66..	43	240	1	.....	44	240	1.623	1.60	1.65	.....	1.624	1.60
1.67 to 1.74..	35	2	.....	.....	35	2	1.67	1.67	.....	.....	1.67	1.67
1.75 to 1.83..	154	105	.....	.....	154	105	1.755	1.751	.....	.....	1.755	1.751
1.84 to 1.91..	24	25	.....	.....	24	25	1.872	1.864	.....	.....	1.872	1.864
1.92 to 1.99..	2	.....	.....	.....	2	.....	1.95	.....	.....	.....	1.95	.....
2.00 to 2.08..	95	85	.....	1	95	86	2.00	2.00	.....	2.00	2.00	2.00
2.09 to 2.16..	1	2	.....	.....	1	2	2.15	2.14	.....	.....	2.15	2.14
2.17 to 2.24..	5	4	.....	.....	5	4	2.194	2.192	.....	.....	2.194	2.192
2.25 to 2.33..	42	95	.....	.....	42	95	2.252	2.25	.....	.....	2.252	2.25
2.34 to 2.41..	1	4	.....	.....	1	4	2.40	2.40	.....	.....	2.40	2.40
2.50 to 2.58..	96	69	.....	.....	96	69	2.50	2.50	.....	.....	2.50	2.50
2.59 to 2.66..	.....	2	.....	.....	.....	2	.....	2.65	.....	.....	.....	2.65
2.67 to 2.74..	1	1	.....	.....	1	1	2.67	2.67	.....	.....	2.67	2.67
2.75 to 2.83..	11	34	.....	.....	11	34	2.766	2.756	.....	.....	2.766	2.753
2.84 to 2.91..	.....	1	.....	.....	.....	1	.....	2.90	.....	.....	.....	2.90
3.00 to 3.08..	44	51	.....	.....	44	51	3.00	3.00	.....	.....	3.00	3.00
3.17 to 3.24..	2	2	.....	.....	2	2	3.25	3.20	.....	.....	3.20	3.20
3.25 to 3.33..	41	17	.....	.....	41	17	3.316	3.25	.....	.....	3.31	3.25
3.50 to 3.58..	4	18	.....	.....	4	18	3.50	3.50	.....	.....	3.50	3.50
3.75 to 3.83..	1	17	.....	.....	1	17	3.75	3.75	.....	.....	3.75	3.75
3.84 to 3.91..	.....	1	.....	.....	.....	1	.....	3.85	.....	.....	.....	3.85
4.00 to 4.08..	5	2	.....	.....	5	2	4.00	4.00	.....	.....	4.00	4.00
4.17 to 4.24..	.....	1	.....	.....	.....	1	.....	4.17	.....	.....	.....	4.17
4.25 to 4.33..	6	.....	.....	.....	6	.....	4.30	.....	.....	.....	4.30	.....
Total	1,063	1,219	64	37	1,127	1,256	1.818	1.845	.921	1.032	1.7	1.82

Remarks.—This industry shows a very substantial gain for 1905. A much larger proportion of the capital invested was employed in the permanent establishment of the industry, as is seen by the increase of 24 per cent. in the amount invested in land, of 13 per cent. in buildings, and of 15 per cent. in machinery. Thirty-three per cent. more material was used and 18 per cent. more paid in wages and salaries, while the value of the output was 21 per cent. greater than in 1904. There was also an increase of 8 per cent. in the average product per employee, and of 4 per cent. in the average yearly earnings of each. Female help is employed chiefly in the minor occupations in this industry. In 1905 there was a decrease of nearly one-half in the number em-

ployed. This accounts in part for the apparent increase of 12 per cent. in the average daily wages paid women in that year; since the decrease in the number employed occurred chiefly among those receiving less than \$1 00 per day. The hours for female help were somewhat shorter in 1905. The hours for male help increased slightly for the same year.

11. BRICK AND TILE—10 ESTABLISHMENTS.

TABLE I—MANAGEMENT AND OPERATION.

Classification.	Number in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount	Per cent
Number of private firms.....	2	2		
Number of male partners.....	5	5		
Number of female partners.....				
Total number of partners.....	5	5		
Number of corporations.....	8	8		
Number of male stockholders.....	26	24	— 2	7.69
Number of female stockholders.....	5	8	+ 3	60.—
Total number of stockholders.....	31	32	+ 1	3.23
Total number of partners and stockholders.....	36	37	+ 1	2.78
Smallest number of persons employed.....	49	71	+ 22	44.90
Greatest number of persons employed.....	625	542	— 83	13.28
Average number of persons employed.....	361	331	— 30	8.31
Average days in operation.....	211	214	+ 3	1.42

TABLE II—INVESTMENT.

Classification.	Capital invested in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Land	\$70,158 66	\$73,118 66	+ \$2,990 00	4.22
Buildings and fixtures	94,598 00	115,108 00	+ 20,510 00	21.68
Machinery, etc.	293,131 65	317,294 10	+ 24,162 45	8.24
Cash and other capital.....	135,240 46	107,697 95	— 27,542 51	20.37
Total	\$593,128 77	\$613,218 71	+\$20,089 94	3.39

TABLE III A—VALUE OF MATERIALS AND LABOR EMPLOYED, AND OF PRODUCT.

Classification.	Value of material used, wages and salaries paid in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Raw material used	\$22,325 65	\$19,307 13	— \$3,018 52	13.52
Other material used	89,953 36	84,084 19	— 5,869 17	6.53
Wages	156,499 88	143,457 79	— 13,042 09	8.33
Salaries	34,820 95	31,450 09	— 370 95	1.07
Profit and minor expenses ..	53,654 79	47,201 12	— 6,453 67	12.01
Goods made and work done.	357,254 63	328,500 23	— 28,754 40	8.05

TABLE III B—ANALYSIS OF TABLE III A

Classification.	1904.	1905.
Value of goods made and work done (gross product)	\$357,254 63	\$328,500 23
Value of stock used and other material consumed in production	112,279 01	103,391 32
Industry product (gross production less value of stock and material)	244,975 62	225,108 91
Wages and salaries (Labor's direct share of pro- duct)	191,320 83	177,907 79
Profit and minor expense fund (industry product less wages)	53,654 79	47,201 12
Percentage of industry product paid in wages	Per cent. 78.10	Per cent. 79.03
Percentage of industry product devoted to profit and minor expenses	21.90	20.97

TABLE IV—AVERAGE CAPITAL, ETC., PER EMPLOYEE.

Classification.	Average capital, product and yearly earnings in		Increase, +, or de- crease, —, in 1905.	
	1904.	1905.	Amount.	Per cent.
Average capital per employee	\$1,643 02	\$1,852 62	+ \$209 60	12.76
Average product per employee	989 63	992 45	+ 2 82	0.29
Average yearly earnings	433 52	433 41	— 0 11	0.03

TABLE V—RANGE OF EMPLOYMENT AND OF UNEMPLOYMENT.

Months.	Total no. of persons employed in		Percentages of			
			Employment in		Unemployment in	
	1904.	1905.	1904.	1905.	1904.	1905.
January	49	120	7.84	22.14	92.16	77.86
February	68	71	10.88	13.10	89.12	86.90
March	154	142	24.64	26.20	75.36	73.80
April	291	288	46.56	53.14	53.44	43.86
May	481	506	76.96	93.36	23.04	6.64
June	552	541	88.32	99.82	11.68	0.18
July	616	542	98.56	100.00	1.44	.....
August	635	539	100.00	99.45	.....	0.55
September	570	495	91.20	91.33	8.80	8.67
October	495	372	79.20	68.63	20.80	31.37
November	304	214	48.64	39.48	51.36	60.52
December	131	139	20.96	25.65	79.04	74.35
Average	361	331	57.76	61.07	42.24	38.93

TABLE VI—OCCUPATIONS AND WAGES OF EMPLOYEES.

Occupations.	Total no. of persons.		Average hours per day.		Average wages per day.		Average wages per hour.		Increase, +, or decrease, per day in 1905.	
	1904	1905	1904.	1905.	1904	1905.	1904.	1905.	Amt.	Per ct.
Boys	62	36	10	10	\$.794	\$.751	\$.079	\$.075	— .043	5.42
Burners	17	19	11.76	10.05	2.16	2.16	.183	.214	.....	.....
Blacksmiths	1	1	10	10	2.15	2.15	.215	.215	.....	.....
Carpenters	4	3	10	10	2.012	1.968	.201	.196	— .046	2.29
Catchers	3	5	10	10	1.65	1.65	.165	.165	.....	.....
Dumppers	11	12	9.09	10	1.75	1.79	.192	.179	+ .04	2.28
Eggers	7	2	10	10	.75	1.00	.075	.10	+ .25	33.33
Engineers	7	8	11	11.57	2.06	2.265	.187	.196	+ .205	9.95
Feeders	9	1	10	10	1.533	1.75	.153	.175	+ .217	14.15
Firemen	4	5	12	11.6	2.00	2.00	.163	.173	.....	.....
Foremen	2	2	10	10	2.025	2.10	.202	.21	+ .075	3.57
Grinders	1	1	10	10	1.66	1.66	.166	.166	.....	.....
Helpers	12	23	11.67	10.87	1.84	1.776	.157	.163	— .034	.217
Jiggermen	1	1	10	10	1.66	1.66	.166	.166	.....	.....
Laborers	148	122	10	10	1.632	1.656	.163	.165	+ .024	1.47
Loaders	20	21	10	10	1.587	1.624	.158	.162	+ .037	2.33
Layers	1	1	10	10	2.15	2.15	.215	.215	.....	.....
Machinists	7	3	10	10	2.27	1.936	.227	.193	— .334	14.71
Masons .....	.....	4	.....	10	.....	3.625	.....	.362	.....	.....
Moldworkers .....	.....	1	.....	10	.....	1.10	.....	.11	.....	.....
Pilers	6	.....	10	.....	1.566	.....	.156	.....	.....	.....
Pressmen	2	2	10	10	1.60	1.75	.16	.175	+ .15	9.31
Priggers .....	.....	6	.....	10	.....	1.775	.....	.175	.....	.....
Rackmen	4	3	10	10	1.90	1.90	.19	.19	.....	.....
Repairers	2	.....	10	.....	1.75	.....	.175	.....	.....	.....
Sand burners	4	4	10	10	1.00	1.025	.10	.102	+ .025	2.50
Sanders	4	2	10	10	1.50	1.75	.15	.175	+ .25	16.67
Setters	20	22	10	10	2.137	2.107	.213	.21	— .037	1.74
Shovelers	44	43	10	10	1.657	1.667	.165	.166	+ .01	.603
Sorters	12	9	10	10	2.008	2.111	.20	.211	+ .103	5.13
Strikers	13	8	9.23	10	1.865	1.95	.202	.195	+ .085	4.55
Strippers	8	.....	10	.....	1.65	.....	.165	.....	.....	.....
Teamsters	31	22	10	10.18	1.58	1.637	.158	.16	+ .057	3.60
Timekeepers, female .....	.....	1	.....	8	.....	.85	.....	.106	.....	.....
Truckers	56	44	10	10	1.65	1.65	.165	.165	.....	.....
Watchmen	1	.....	12	.....	1.40	.....	.116	.....	.....	.....
Wheelers	89	73	10	10	1.678	1.686	.167	.168	+ .008	.48
Totals	613	515	10.08	10.10	\$1.607	\$1.681	\$.159	\$.166	+ \$.075	4.66

TABLE VII—CLASSIFICATION OF DAILY WAGES.

Classified daily wages, (inclusive).	Total number of persons employed.						Average wages per day.					
	Male.		Female.		Total.		Male.		Female.		Total.	
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.
\$.50 to \$.58..	3	3	.....	.....	3	3	\$.50	\$.50	.....	.....	\$.50	\$.50
.59 to .66..	8	4	.....	.....	8	4	.643	.65	.....	.....	.643	.65
.75 to .83..	40	23	.....	.....	40	23	.75	.75	.....	.....	.75	.75
.84 to .91..	4	3	.....	.....	4	4	.90	.887	.....	\$.85	.90	.887
1.00 to 1.08..	19	8	.....	.....	19	8	1.00	1.00	.....	.....	1.00	1.00
1.09 to 1.16..	1	3	.....	.....	1	3	1.10	1.116	.....	.....	1.10	1.116
1.25 to 1.33..	4	3	.....	.....	4	3	1.27	1.25	.....	.....	1.27	1.25
1.34 to 1.41..	5	.....	.....	.....	5	.....	1.36	.....	.....	.....	1.36	.....
1.50 to 1.58..	113	60	.....	.....	113	60	1.527	1.529	.....	.....	1.527	1.529
1.59 to 1.66..	217	186	.....	.....	217	186	1.65	1.646	.....	.....	1.65	1.646
1.67 to 1.74..	.....	9	.....	.....	.....	9	.....	1.74	.....	.....	.....	1.74
1.75 to 1.83..	101	113	.....	.....	101	113	1.752	1.751	.....	.....	1.752	1.751
1.84 to 1.91..	25	21	.....	.....	25	21	1.898	1.90	.....	.....	1.898	1.90
1.92 to 1.99..	.....	2	.....	.....	.....	2	.....	1.935	.....	.....	.....	1.935
2.00 to 2.08..	39	39	.....	.....	39	39	2.002	2.00	.....	.....	2.002	2.00
2.09 to 2.16..	14	12	.....	.....	14	12	2.15	2.15	.....	.....	2.15	2.15
2.25 to 2.33..	11	10	.....	.....	11	10	2.263	2.265	.....	.....	2.263	2.265
2.34 to 2.41..	2	2	.....	.....	2	2	2.40	2.40	.....	.....	2.40	2.40
2.50 to 2.58..	2	5	.....	.....	2	5	2.50	2.50	.....	.....	2.50	2.50
2.59 to 2.66..	2	1	.....	.....	2	1	2.655	2.65	.....	.....	2.655	2.65
3.00 to 3.08..	1	4	.....	.....	1	4	3.00	3.00	.....	.....	3.00	3.00
3.25 to 3.33..	1	1	.....	.....	1	1	3.25	3.25	.....	.....	3.25	3.25
3.50 to 3.58..	.....	1	.....	.....	.....	1	.....	3.50	.....	.....	.....	3.50
4.00 to 4.08..	1	.....	.....	.....	1	.....	4.00	.....	.....	.....	4.00	.....
5.00 to 5.09..	.....	1	.....	.....	.....	1	.....	5.00	.....	.....	.....	5.00
Total....	613	514	.....	1	613	515	\$1.607	\$1.632	.....	\$.85	\$1.607	\$1.632

Remarks.—Although there was 3 per cent. more capital invested in this industry in 1905 than in 1904, 8 per cent. fewer persons were employed, and in consequence there was a decrease of 8 per cent. in the materials used, the total wages paid, and the output. Whether the employment of fewer workmen in 1905 was due to the impossibility of securing the necessary help at the proper time, or to the over-supplying of the market in 1904, it is not possible to ascertain from the returns made by the establishments. The former explanation appears the more probable in view of the fact that this industry is carried on chiefly in the summer and autumn, only a few employees being retained through the winter. Thus the percentage of unemployment reached 92 per cent. in January of 1904. Many workmen might therefore fail to return to this industry in the spring if offered higher wages elsewhere. Although 5 per cent. higher daily wages were paid in this industry in 1905 than in 1904, they were still about 7 per cent. lower than the average daily wages paid men in all industries the same year. With one exception, no female help was employed in either year.

12. BROOMS AND BRUSHES—7 ESTABLISHMENTS.

TABLE I—MANAGEMENT AND OPERATION.

Classification.	Number in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent.
Number of private firms	5	5		
Number of male partners	5	5		
Number of female partners				
Total number of partners	5	5		
Number of corporations	2	2		
Number of male stockholders	4	8	+ 4	100.—
Number of female stockholders	2	3	+ 1	50.—
Total number of stockholders	6	11	+ 5	83.33
Total number of partners and stockholders	11	16	+ 5	45.45
Smallest number of persons employed	68	61	— 7	10.29
Greatest number of persons employed	73	66	— 7	9.59
Average number of persons employed	72	64	— 8	11.11
Average days in operation	282	279	— 3	1.06

TABLE II—INVESTMENT.

Classification.	Capital invested in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent.
Land	\$8,500 00	\$9,400 00	+ \$900 00	10.59
Buildings and fixtures	16,861 00	22,645 00	+ 5,784 00	34.30
Machinery, etc.	16,855 20	18,046 50	+ 1,191 30	7.23
Cash and other capital	62,201 53	54,908 50	— 7,293 03	11.73
Total	\$104,417 73	\$104,995 00	+ \$577 27	0.55

TABLE III A—VALUE OF MATERIALS AND LABOR EMPLOYED AND OF PRODUCT.

Classification.	Value of material used, wages and salaries paid in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Raw material used	\$54,030 78	\$52,737 99	— \$1,292 79	2.39
Other material used	4,969 10	3,774 00	— 1,195 10	24.05
Wages	30,511 23	26,735 19	— 3,776 04	12.38
Salaries	9,907 00	8,176 88	— 1,730 12	17.46
Profit and minor expenses ...	25,498 33	22,347 43	— 3,150 90	12.36
Goods made and work done ..	124,916 44	113,771 49	— 11,144 95	8.92

TABLE III B—ANALYSIS OF TABLE III A.

Classification.	1904.	1905.
Goods made and work done (gross product).....	\$124,916 44	\$113,771 49
Value of stock used and material consumed in production	58,909 88	56,511 99
Industry product (gross production less value of stock and material)	65,916 56	57,259 50
Wages and salaries (Labor's direct share of product)	40,418 23	34,912 07
Profit and minor expense fund (industry product less wages)	25,498 33	22,124 23
Percentage of industry product paid in wages	Per cent. 61.32	Per cent. 60.97
Percentage of industry product devoted to profit and minor expenses	38.68	39.03

TABLE IV—AVERAGE CAPITAL, ETC., PER EMPLOYEE.

Classification.	Average capital, product and yearly earnings in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent.
Average capital per employee.....	\$1,450 25	\$1,640 55	+ \$190 30	13.12
Average product per employee	1,734 95	1,777 09	+ 42 14	2.43
Average yearly earnings	423 77	417 74	— 6 03	1.42

TABLE V—RANGE OF EMPLOYMENT AND OF UNEMPLOYMENT.

Months.	Total no. of persons employed in		Percentages of			
			Employment in		Unemployment in	
	1904.	1905	1904.	1905.	1904.	1905.
January	73	61	100.00	92.43	.....	7.57
February	73	62	100.—	93.94	.....	6.06
March	73	64	100.—	96.97	.....	3.03
April	72	63	98.63	95.46	1.37	4.54
May	70	62	95.89	93.94	4.11	6.06
June	69	62	94.53	93.94	5.47	6.06
July	70	65	95.89	98.49	4.11	1.51
August	69	64	94.53	96.97	5.47	3.03
September	68	63	93.15	95.46	6.85	4.54
October	70	63	95.89	95.46	4.11	4.54
November	72	63	98.63	95.46	1.37	4.54
December	71	63	97.26	100.—	2.74	.....
Average	72	64	98.63	96.97	1.37	3.03

TABLE VI—OCCUPATIONS AND WAGES OF EMPLOYEES.

Occupations.	Total no. of persons,		Average hours per day.		Average wages per day.		Average wages per hour.		Increase, +, or decrease, —, per day in 1905.	
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	Amt Per ct.	
									Amt	Per ct.
Binders	2	8			\$1.50		\$.187			
Broom makers	11	13	10	9.85	1.618	\$1.836	.161	\$.186	+	\$.218 13.47
Broom winders		2		10		2.00		.20		
Brush makers	27	16	10	10.06	1.035	1.156	.103	.114	+	.121 11.69
Engineers	2	1	10.5	11	1.925	1.75	.193	.159	—	.175 9.09
Foremen		1		10		2.00		.20		
Graders	2	1	10	10	1.45	1.25	.145	.125	—	.20 16.
Graders, female	2		10		1.00		.10			
Helpers	7	12	10	10	.679	.903	.067	.09	+	.221 32.98
Helpers, female		2		10		.75		.075		
Hurl cutters	2	1	10	10	.675	.69	.037	.03	—	.075 11.11
Sewers	6	6	9.33	9.58	1.158	1.292	.124	.135	+	.134 11.57
Sizers	1	1	6	8	.35	.50	.058	.062	+	.15 42.86
Sorters	4	4	10	19	.775	.813	.077	.081	+	.035 4.90
Sorters, female	1		10		.75		.075			
Tiers	7	5	9.71	9.5	1.872	1.68	.193	.175	—	.192 10.20
Total	74	65	9.82	9.89	1.187	1.295	.121	.131	+	.108 9.09

TABLE VII—CLASSIFICATION OF DAILY WAGES.

Classified daily wages, (inclusive).	Total number of persons employed.						Average wages per day.					
	Male.		Female.		Total.		Male.		Female.		Total.	
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.
\$.27 to \$.41 ..	1				1		\$.35				\$.35	
.42 to .49 ..		3				3		\$.446				\$.446
.50 to .58 ..	7	2			7	2	.50	.50			.50	.50
.59 to .63 ..	1	2			1	2	.63	.635			.60	.605
.67 to .74 ..		2				2		.67				.67
.75 to .83 ..	19	8	1	2	20	10	.789	.798	\$.75	\$.75	.788	.783
.84 to .91 ..	2				2		.875				.875	
1.00 to 1.08 ..	2	8	2		4	8	1.00	1.00	1.00	1.00	1.00	1.00
1.09 to 1.16 ..	3	2			3	2	1.117	1.10			1.117	1.10
1.17 to 1.24 ..	1	1			1	1	1.20	1.17			1.20	1.17
1.25 to 1.33 ..	5	5			5	5	1.30	1.28			1.30	1.28
1.34 to 1.41 ..	1	2			1	2	1.35	1.40			1.35	1.40
1.50 to 1.58 ..	6	6			6	6	1.505	1.50			1.505	1.50
1.59 to 1.63 ..	10	1			10	1	1.63	1.63			1.63	1.63
1.75 to 1.83 ..	7	10			7	10	1.614	1.774			1.714	1.774
1.84 to 1.91 ..	1	3			1	3	1.85	1.897			1.85	1.897
1.92 to 1.99 ..	1				1		1.93				1.93	
2.00 to 2.08 ..	3	5			3	5	2.00	2.015			2.00	2.012
2.09 to 2.16 ..	1	1			1	1	2.10	2.10			2.10	2.10
2.17 to 2.24 ..		1				1		2.17				2.17
2.24 to 2.49 ..		1				1		2.48				2.48
Total and av.	71	63	3	2	74	65	\$1.199	\$1.313	\$.917	\$.75	\$1.18	\$1.295

Remarks.—Although there was a substantial increase in the amount of capital devoted to investment in land and buildings, this industry shows a loss for 1905 in the material used, the number of persons employed, the total wages paid, and the output. The decrease was probably due to an over-stocked market. Employment was exceptionally uniform each year, the greatest percentage of unemployment for any month being less than 8 per cent. Of the industry product, 61 per cent. was paid in wages each year. There was an increase of 9 per cent. in the average daily wages of all employees. The average wages paid in this industry were very low, owing chiefly to the large number of minors employed. Only 3 women were employed in 1904, and only 2 in 1905.

13. CHAIRS—10 ESTABLISHMENTS.

TABLE I—MANAGEMENT AND OPERATION.

Classification.	Number in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent.
Number of private firms	2	2	.....	.....
Number of male partners	2	3	+ 1	50.00
Number of female partners	1	2	+ 1	100.00
Total number of partners	3	5	+ 2	63.67
Number of corporations	8	8	.....	.....
Number of male stockholders	181	108	— 13	7.18
Number of female stockholders	30	31	+ 1	3.33
Total number of stockholders	211	199	— 12	5.69
Total number of partners and stockholders	214	204	— 10	4.67
Smallest number of persons employed	2,214	2,254	+ 40	1.81
Greatest number of persons employed	2,333	2,419	+ 86	3.69
Average number of persons employed	2,274	2,337	+ 63	2.77
Average days in operation	287	293	+ 6	2.09

TABLE II—INVESTMENT.

Classification.	Capital invested in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent.
Land	\$301,952 00	\$305,652 00	+ \$3,700 00	1.23
Buildings and fixtures	533,721 51	559,663 91	+ 25,942 40	4.86
Machinery, etc.,	667,491 38	692,444 45	+ 24,953 07	3.74
Cash and other capital	1,010,421 25	1,318,000 31	+ 307,579 06	30.44
Total	\$2,513,586 14	\$2,875,760 67	+\$362,174 53	14.41

TABLE III A—VALUE OF MATERIALS AND LABOR EMPLOYED AND OF PRODUCT.

Classification.	Value of material used, wages and salaries paid in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent.
Raw material used	\$1,215,648 64	\$1,223,562 29	+ \$7,913 65	0.65
Other material used	164,233 79	165,674 45	+ 1,440 66	0.88
Wages	957,722 59	1,010,054 95	+ 52,332 36	5.46
Salaries	142,020 24	148,076 56	+ 6,056 32	4.26
Profit and minor expenses ..	459,624 79	467,121 36	+ 7,496 57	1.63
Goods made and work done.	2,939,250 05	3,014,489 61	+ 75,239 56	2.56

TABLE III B—ANALYSIS OF TABLE III A.

Classification.	1904.	1905.
Value of goods and work done (gross product).....	\$2,939,250 05	\$3,014,489 61
Value of stock used and other material consumed in production	1,379,832 43	1,389,233 74
Industry product (gross product less value of stock and material)	1,559,367 62	1,625,252 87
Wages and salaries (Labor's direct share of product)	1,099,742 83	1,158,131 51
Profit and minor expense fund (industry product less wages)	459,624 79	467,121 36
Percentage of industry product paid in wages.....	Per cent. 70.52	Per cent. 71.26
Percentage of industry product devoted to profit and minor expenses	29.48	28.74

TABLE IV—AVERAGE CAPITAL, ETC., PER EMPLOYEE.

Classification.	Average capital, product and yearly earnings in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent.
Average capital per employee	\$1,105 36	\$1,230 54	+ \$125 19	11.32
Average product per employee	1,292 55	1,289 90	— 2 65	0.20
Average yearly earnings	421 12	432 20	+ 11 08	2.63

TABLE V—RANGE OF EMPLOYMENT AND OF UNEMPLOYMENT.

Months	Total no. of persons employed in		Percentages of			
	1904.	1905.	Employment in		Unemployment in	
			1904.	1905.	1904.	1905.
January	2,273	2,266	97.43	93.63	2.57	6.32
February	2,267	2,280	97.93	94.25	2.27	5.75
March	2,317	2,316	99.31	95.74	.69	4.26
April	2,333	2,364	100.00	97.73	.....	2.27
May	2,315	2,383	99.23	93.55	.77	1.45
June	2,227	2,272	95.40	93.92	4.54	6.08
July	2,214	2,254	94.90	93.18	5.10	6.82
August	2,248	2,326	96.36	95.16	3.64	3.84
September	2,254	2,380	96.61	98.39	3.39	1.61
October	2,267	2,419	97.73	100.00	2.27	.....
November	2,305	2,414	98.80	99.79	1.20	.21
December	2,264	2,365	97.04	97.77	2.96	2.23
Average	2,274	2,337	97.47	95.61	2.53	3.29

TABLE VI—OCCUPATIONS AND WAGES OF EMPLOYEES.

Occupations.	Total no. of persons.		Average hours per day.		Average wages per day.		Average wages per hour.		Increase, +, or decrease, —, per day in 1905.	
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	Amt.	Per ct.
Bench hands	235	270	10	10	\$1.229	\$1.261	\$.123	\$.126	+ \$.032	2.60
Benders	32	34	10	10	1.291	1.35	.129	.135	+ .059	4.57
Blacksmiths	4	5	10	10	1.625	1.70	.163	.17	+ .075	4.62
Borers	45	47	10	10	1.204	1.22	.12	.122	+ .016	1.33
Cabinet makers	4	3	10	10	1.65	1.65	.165	.165	.....	.....
Caners	70	70	10	10	1.25	1.25	.125	.125	.....	.....
Carpenters	8	9	10	10	1.575	1.556	.158	.156	— .019	1.21
Carvers	5	8	10	10	2.40	2.074	.24	.207	— .326	13.53
Chair makers	38	47	10	10	1.675	1.624	.168	.162	— .051	3.04
Cheese box binders	3	6	10	10	1.40	1.15	.14	.115	— .250	17.86
Cheese box nailers	4	.....	10	.....	.80	.....	.03	.....	.....	.....
Decorators	2	2	10	10	1.55	1.55	.155	.155	.....	.....
Decorators, female	2	2	10	10	.90	.90	.09	.09	.....	.....
Dippers	15	14	10	10	1.25	1.271	.125	.127	+ .021	1.63
Dowelers	25	2	10	10	1.15	1.10	.115	.11	— .050	4.35
Dryers	4	.....	10	.....	1.20	.....	.12	.....	.....	.....
Engineers	4	4	10.13	10	2.408	2.435	.24	.244	+ .027	1.12
Files	4	6	10	10	1.75	1.79	.175	.179	+ .040	2.29
Fillers	20	25	10	10	1.05	1.09	.105	.108	+ .030	2.86
Firemen	12	12	10.67	10	1.388	1.38	.13	.138	— .008	.58
Foremen	76	89	10	10	2.339	2.368	.234	.237	+ .029	1.24
Helpers	267	249	10	10	.966	1.01	.097	.101	+ .044	4.55
Helpers, female	57	74	10	10	.762	.761	.072	.076	— .001	.13
Laborers	593	616	10	10	1.234	1.241	.123	.124	+ .037	.57
Laborers, female	3	8	10	10	.793	.869	.079	.087	+ .076	9.53
Lathe hands	22	20	10	10	1.25	1.25	.125	.125	.....	.....
Lumber pilers	15	15	10	10	1.633	1.633	.168	.168	.....	.....
Machine tenders	270	281	10	10	1.365	1.338	.137	.137	+ .003	.22
Machinists	2	6	10	10	1.50	1.458	.15	.146	— .042	2.80
Markers	.....	4	.....	10	.....	.70	.....	.07	.....	.....
Mixers	2	2	10	10	1.35	1.35	.135	.135	.....	.....
Packers	1	3	10	10	1.00	1.25	.10	.125	— .250	25.00
Painters	83	113	10	10	1.417	1.467	.142	.147	+ .050	3.53
Pearl placers	.....	1	.....	10	.....	1.00	.....	.10	.....	.....
Pearl placers, female	1	.....	10	.....	1.00	.....	.10	.....	.....	.....
Piece workers	13	14	10	10	1.904	1.911	.19	.191	+ .007	.37
Planers	11	17	10	10	1.432	1.285	.143	.129	— .147	10.27
Polishers	87	94	10	10	1.271	1.262	.127	.126	— .009	.71
Rubbers	48	30	10	10	1.098	1.023	.11	.102	— .075	6.83
Sanders	125	123	10	10	1.154	1.20	.115	.12	+ .046	3.99
Sawyers	117	127	10	10	1.531	1.624	.158	.162	+ .043	2.72
Scalers	2	2	10	10	2.25	2.25	.225	.225	.....	.....
Scrapers	8	13	10	10	1.35	1.46	.135	.143	+ .110	8.15
Scoopers	6	6	10	10	1.00	1.00	.10	.10	.....	.....
Seat makers	2	2	10	10	1.75	1.75	.175	.175	.....	.....
Shapers	10	10	10	10	1.42	1.416	.142	.142	— .004	.28
Shippers	43	44	10	10	1.166	1.139	.117	.114	— .027	2.32
Shippers, female	44	45	10	10	.43	.483	.048	.048	+ .003	.63
Teamsters	15	15	10	10	1.637	1.637	.161	.167	+ .060	3.73
Timekeepers	1	1	10	10	1.50	1.50	.15	.15	.....	.....
Turners	130	101	10	10	1.516	1.559	.152	.156	+ .043	2.83
Upholsterers	8	14	10	10	1.404	1.234	.14	.123	— .176	12.11
Varnishers	92	92	10	10	1.329	1.412	.133	.141	+ .032	6.25
Varnishers, female	41	43	10	10	.806	.816	.082	.082	+ .010	1.24
Wagon makers	.....	1	.....	10	.....	2.00	.....	.20	.....	.....
Warehousemen	.....	9	.....	10	.....	1.25	.....	1.25	.....	.....
Watchmen	8	8	11.25	11	1.466	1.443	.13	.131	— .023	1.57
Wood workers	29	35	10	10	1.30	1.30	.13	.13	.....	.....
Wrappers	17	12	10	10	.614	.669	.061	.067	+ .055	8.96
Wrappers, female	76	77	10	10	.573	.615	.057	.062	+ .043	7.52
Yardmen	7	9	10	10	1.35	1.37	1.35	1.37	+ .020	1.43
Total and average..	3,871	3,991	10	10	1.255	1.281	.126	.128	+ .026	2.07

TABLE VII—CLASSIFICATION OF DAILY WAGES.

Classified daily wages, (inclusive).	Total number of persons employed.						Average wages per day.					
	Male.		Female.		Total.		Male.		Female.		Total.	
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.
\$.34 to \$.41.	.....	.....	7	5	7	5	.....	.....	\$.357	\$.35	\$.357	\$.35
.42 to .49.	.....	.....	25	23	25	23	.....	.....	.45	.459	.45	.459
.50 to .58.	14	5	54	56	68	61	\$.572	\$.532	.501	.501	.516	.503
.59 to .66.	22	17	47	16	69	33	.613	.625	.634	.606	.637	.613
.67 to .74.	28	20	6	37	34	57	.70	.70	.70	.683	.70	.680
.75 to .83.	42	31	50	68	92	99	.783	.777	.764	.763	.773	.769
.84 to .91.	14	24	21	25	35	49	.871	.877	.879	.876	.876	.877
.92 to .99.	9	2	.....	.....	9	2	.95	.95	.....	.....	.95	.95
1.00 to 1.08.	142	125	13	17	155	142	1.019	1.017	1.00	1.00	1.013	1.015
1.09 to 1.16.	407	328	.....	1	407	329	1.118	1.124	.....	1.15	1.118	1.124
1.17 to 1.24.	584	251	.....	.....	584	251	1.229	1.199	.....	.....	1.229	1.159
1.25 to 1.33.	624	1,107	.....	.....	624	1,107	1.264	1.263	.....	.....	1.264	1.263
1.34 to 1.41.	243	224	.....	.....	243	224	1.368	1.368	.....	.....	1.368	1.368
1.42 to 1.49.	9	26	.....	.....	9	26	1.45	1.449	.....	.....	1.45	1.449
1.50 to 1.58.	201	225	.....	.....	201	205	1.501	1.503	.....	.....	1.501	1.503
1.59 to 1.66.	55	48	.....	.....	55	48	1.649	1.648	.....	.....	1.649	1.648
1.67 to 1.74.	3	2	.....	.....	3	2	1.70	1.67	.....	.....	1.70	1.67
1.75 to 1.83.	92	113	1	1	93	119	1.762	1.759	1.75	1.75	1.762	1.759
1.84 to 1.91.	4	5	.....	.....	4	5	1.88	1.874	.....	.....	1.88	1.874
2.00 to 2.08.	81	87	.....	.....	81	87	2.00	2.00	.....	.....	2.00	2.00
2.09 to 2.16.	21	23	.....	.....	21	23	2.15	2.12	.....	.....	2.15	2.12
2.25 to 2.33.	19	28	.....	.....	19	28	2.25	2.25	.....	.....	2.25	2.25
2.50 to 2.58.	17	30	.....	.....	17	30	2.50	2.50	.....	.....	2.50	2.50
2.75 to 2.83.	3	2	.....	.....	3	2	2.75	2.75	.....	.....	2.75	2.75
3.00 to 3.08.	11	12	.....	.....	11	12	3.00	3.00	.....	.....	3.00	3.00
4.00 to 4.08.	2	2	.....	.....	2	2	4.00	4.00	.....	.....	4.00	4.00
Total and average	1,647	2,742	224	240	2,871	2,991	1.305	1.235	.653	.68	1.255	1.231

Remarks.—The substantial growth experienced by this industry in the years 1904 and 1905 is evidenced by the increase of 14 per cent. in the capital invested, of 3 per cent. in the number of persons employed, of 5 per cent. in the total wages and salaries paid, and of 3 per cent. in the output. A large proportion of the industry product was paid in wages each year,—about 71 per cent. Employment was remarkably uniform throughout the two years, 6 per cent. being the maximum of unemployment in any month. A large number of children were employed in this industry. Female help was also employed, to the extent of about 8 per cent. of the total number of employees. The average daily wages paid in this industry were consequently low. All female help worked 10 hours per day each year. With but two exceptions all were employed in minor occupations.

14. CIGARS—46 ESTABLISHMENTS.

TABLE I—MANAGEMENT AND OPERATION.

Classification.	Number in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent.
Number of private firms.....	42	40		
Number of male partners.....	53	51	— 2	3.77
Number of female partners.....				
Total number of partners.....	53	51	— 2	3.77
Number of corporations.....	4	6	+ 2	50.—
Number of male stockholders.....	16	25	+ 9	56.25
Number of female stockholders.....	3	3		
Total number of stockholders.....	19	28	+ 9	47.37
Total number of partners and stockholders.....	72	79	+ 7	9.72
Smallest number of persons employed.....	756	693	— 63	8.33
Greatest number of persons employed.....	804	768	— 36	4.48
Average number of persons employed.....	783	735	— 48	6.13
Average number of days in operation.....	296	291	— 5	1.69

TABLE II—INVESTMENT.

Classification.	Capital Invested in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent.
Land	\$36,286 66	\$40,600 00	+ \$4,313 34	11.89
Buildings and fixtures.....	88,348 36	88,575 24	+ 226 88	0.26
Machinery, etc.	14,221 73	14,809 43	+ 587 70	4.13
Cash and other capital.....	422,003 58	404,985 84	— 17,017 74	4.03
Total	\$560,860 33	\$548,970 51	— 11,889 82	2.12

TABLE III A—VALUE OF MATERIALS AND LABOR EMPLOYED, AND OF PRODUCT.

Classification.	Value of material used, wages and salaries paid in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent.
Raw material used.....	\$444,400 04	\$414,484 04	— \$29,916 00	6.73
Other material used.....	74,191 43	64,088 79	— 10,102 64	13.62
Wages	312,952 16	288,803 21	— 24,148 95	7.72
Salaries	66,075 53	66,112 37	+ 36 84	0.06
Profit and minor expenses....	299,968 81	277,371 57	— 22,597 24	7.53
Goods made and work done..	\$1,197,587 97	\$1,110,859 98	— \$86,727 99	7.24

TABLE III B—ANALYSIS OF TABLE III A.

Classification.	1904.	1905.
Value of goods made and work done (gross product)	\$1,197,587 97	\$1,110,859 98
Value of stock used and material consumed in production	518,591 47	478,572 83
Industry product (gross production less value of stock and material)	678,996 50	632,287 15
Wages and salaries (Labor's direct share of product)	379,027 69	354,915 58
Profit and minor expense fund (industry product less wages)	299,968 81	277,371 57
	Per cent.	Per cent.
Percentage of industry product paid in wages.....	55.82	56.13
Percentage of industry product devoted to profit and minor expenses	44.18	43.87

TABLE IV—AVERAGE CAPITAL, ETC., PER EMPLOYÉE.

Classification.	Average capital, product and yearly earnings in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent.
Average capital per employée.....	\$716 30	\$746 90	+ \$30 60	4.27
Average product per employée.....	1,529 49	1,511 37	— 18 12	1.19
Average yearly earnings	399 63	392 93	— 6 75	1.69

TABLE V—RANGE OF EMPLOYMENT AND OF UNEMPLOYMENT.

Months.	Total no. of persons employed in		Percentages of			
			Employment in		Unemployment in	
	1904.	1905.	1904.	1905.	1904.	1905.
January	759	693	94.40	90.23	5.60	9.77
February	785	721	97.64	93.88	2.36	6.12
March	802	725	99.75	94.40	0.25	5.60
April	789	731	98.13	95.18	1.87	4.82
May	802	727	99.75	94.66	0.25	5.31
June	804	740	100.—	96.35	0.00	3.65
July	773	729	96.14	94.92	3.86	5.08
August	770	768	95.77	100.—	4.23	0.00
September	756	737	94.03	95.96	5.97	4.04
October	793	726	98.63	95.83	1.37	4.17
November	794	750	98.76	97.66	1.24	2.34
December	772	744	96.02	96.88	3.98	3.12
Average	783	735	97.39	95.70	2.61	4.30

TABLE VI—OCCUPATIONS AND WAGES OF EMPLOYEES.

Occupations.	Total No. of persons.		Average hours per day.		Average wages per day.		Average wages per hour.		Increase, +, or decrease, —, per day in 1905.	
	1904.	1905.	1904.	1905	1904.	1905.	1904	1905.	Amt.	Per ct.
Apprentice	8	22	8.23	8.23	\$.496	\$.587	\$.059	\$.071	+ \$.091	18.34
Apprentice, female...	12	?	9	9	.708	.35	.079	.039	— .358	50.56
Bunch makers	2	.....	9	.....	.70	.....	.078	.....	.....	.....
Bunch makers, female	112	94	8.14	8.10	1.134	1.209	.139	.149	+ .075	6.61
Cigar makers	429	377	8.21	8.25	2.124	2.084	.259	.253	— .04	1.88
Cigar makers, female	17	49	8.65	8.27	1.436	2.00	.166	.242	+ .564	39.27
Foremen	3	.....	8.67	.....	3.61	.....	.416	.....	.....	.....
Helpers	20	12	8.25	8.67	.555	.59	.067	.068	+ .035	6.30
Helpers, female	3	7	9	9.43	.40	.643	.044	.038	+ .243	60.75
Packers	4	13	8	8	2.923	3.385	.367	.423	+ .452	15.41
Packers, female	6	14	8	8.64	.958	.845	.119	.098	— .113	11.78
Rollers, female	15	9	9	9	.67	1.111	.074	.123	+ .441	65.67
Strippers	54	55	8.48	8.22	.612	.584	.072	.071	+ .029	4.73
Strippers, female	103	118	8.27	8.49	.579	.609	.07	.072	+ .03	5.18
Total and averages	788	772	8.27	8.30	1.548	1.544	.187	.186	— .004	.22

TABLE VII—CLASSIFICATION OF DAILY WAGES.

Classified daily wages, (inclusive).	Total number of persons employed.						Average wages per day.					
	Male.		Female.		Total.		Male.		Female.		Total.	
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.
\$.33 and less	5	3	3	5	8	8	\$.274	\$.33	\$.32	\$.324	\$.294	\$.326
.33 to .41..	8	19	38	22	46	41	.379	.384	.392	.395	.39	.39
.42 to .49..	2	4	10	1	12	5	.43	.437	.443	.45	.441	.438
.50 to .58..	38	32	37	27	75	59	.505	.51	.512	.506	.508	.508
.59 to .66..	6	12	5	51	11	63	.632	.64	.642	.647	.636	.639
.67 to .74..	12	3	5	8	17	11	.693	.697	.696	.698	.694	.69
.75 to .83..	7	10	22	9	29	19	.773	.797	.754	.776	.758	.785
.84 to .91..	6	3	11	5	17	8	.858	.888	.876	.85	.87	.863
.92 to .99..	.....	.....	2	1	2	1	.....	.....	.96	.92	.96	.92
1.00 to 1.08..	14	6	62	66	76	72	1.00	1.00	1.00	1.001	1.00	1.001
1.09 to 1.16..	1	5	.....	.....	1	5	1.15	1.15	.....	.....	1.15	1.15
1.17 to 1.24..	.....	5	.....	.....	.....	5	.....	1.17	.....	.....	.....	1.17
1.25 to 1.33..	13	19	43	9	56	28	1.273	1.288	1.251	1.25	1.256	1.276
1.34 to 1.41..	10	7	1	.....	11	7	1.385	1.40	1.40	.....	1.386	1.40
1.50 to 1.58..	47	31	24	51	71	82	1.511	1.50	1.507	1.50	1.509	1.50
1.59 to 1.66..	7	5	2	1	9	6	1.627	1.60	1.65	1.62	1.632	1.603
1.67 to 1.74..	16	11	.....	2	16	13	1.699	1.634	.....	1.70	1.699	1.686
1.75 to 1.83..	48	38	2	.....	50	38	1.77	1.778	1.75	.....	1.769	1.778
1.84 to 1.91..	10	10	.....	.....	10	10	1.857	1.875	.....	.....	1.857	1.875
1.92 to 1.99..	8	4	.....	1	8	5	1.949	1.945	.....	1.95	1.949	1.946
2.00 to 2.08..	66	80	.....	24	66	104	2.00	2.008	.....	2.00	2.00	2.006
2.09 to 2.16..	12	7	.....	.....	12	7	2.133	2.10	.....	.....	2.133	2.10
2.17 to 2.24..	6	11	.....	.....	6	11	2.197	2.17	.....	.....	2.197	2.17
2.25 to 2.33..	51	22	1	.....	52	23	2.252	2.257	2.30	.....	2.253	2.257
2.34 to 2.41..	1	1	.....	.....	1	1	2.35	2.38	.....	.....	2.35	2.38
2.50 to 2.58..	33	65	.....	7	33	72	2.50	2.504	.....	2.50	2.50	2.503
2.59 to 2.66..	3	6	.....	.....	3	6	2.60	2.60	.....	.....	2.60	2.60
2.67 to 2.74..	3	.....	.....	.....	3	.....	2.68	.....	.....	.....	2.68	.....
2.75 to 2.83..	32	8	.....	.....	32	8	2.75	2.75	.....	.....	2.75	2.75
2.84 to 2.91..	2	.....	.....	.....	2	.....	2.87	.....	.....	.....	2.87	.....
3.00 to 3.08..	23	31	.....	3	23	34	3.00	3.00	.....	3.00	3.00	3.00
3.09 to 3.16..	2	.....	.....	.....	2	.....	3.105	.....	.....	.....	3.105	.....
3.17 to 3.24..	1	.....	.....	.....	1	.....	3.20	.....	.....	.....	3.20	.....
3.25 to 3.33..	4	5	.....	.....	4	5	3.27	3.282	.....	.....	3.27	3.282
3.34 to 3.41..	1	1	.....	.....	1	1	3.35	3.40	.....	.....	3.35	3.40
3.50 to 3.58..	8	15	.....	.....	8	15	3.50	3.50	.....	.....	3.50	3.50
3.67 to 3.74..	1	.....	.....	.....	1	.....	3.70	.....	.....	.....	3.70	.....
3.75 to 3.83..	3	.....	.....	.....	3	.....	3.75	.....	.....	.....	3.75	.....
3.84 to 3.91..	1	.....	.....	.....	1	.....	3.90	.....	.....	.....	3.90	.....
4.00 to 4.08..	3	.....	.....	.....	3	.....	4.00	.....	.....	.....	4.00	.....
4.25 to 4.33..	1	.....	.....	.....	1	.....	4.25	.....	.....	.....	4.25	.....
4.75 to 4.83..	4	.....	.....	.....	4	.....	4.75	.....	.....	.....	4.75	.....
5.00 to 5.08..	1	.....	.....	.....	1	.....	5.00	.....	.....	.....	5.00	.....
Total and av.	520	479	268	293	788	772	1.891	1.841	.822	1.03	1.548	1.545

Remarks.—Reports were received from considerably less than half of the establishments in the state engaged in this industry, and in consequence the value of any conclusions based upon these returns is greatly lessened. As far as these 46 establishments are concerned, there was a decrease in 1905 in the amount of capital invested, the value of the materials used, the number of persons employed, the total wages and salaries paid, and the output. This is doubtless to be accounted for chiefly by an

overproduction in 1904. Female help was employed in all of the occupations in which men were, each year, except that none was employed as forewoman. A large number of children were employed also. The high maximum wages received by women in this industry are noteworthy. In 1904 but one received \$2.00 or over per day. In 1905, however, 24 received \$2.00; 7, \$2.50; and 3, \$3.00. The average daily wages of all female employees increased about 20 per cent. for 1905, whereas those of men suffered a decrease of 3 per cent. The total number of female employees was also greater by 25, although the number of male persons employed was 41 less. The average hours of labor for both men and women were much less than the average for all industries, being but slightly over eight per day.

15. CLOTHING—20 ESTABLISHMENTS.

TABLE I—MANAGEMENT AND OPERATION.

Classification.	Number in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Number of private firms.....	6	6		
Number of male partners.....	16	13	— 3	18.75
Number of female partners.....				
Total number of partners.....	16	13	— 3	18.75
Number of corporations.....	14	14		
Number of male stockholders.....	106	104	— 2	1.89
Number of female stockholders.....	77	66	— 11	14.29
Total number of stockholders.....	183	170	— 13	7.10
Total number of partners and stockholders.....	199	183	— 16	8.04
Smallest number of persons employed.....	1,972	1,749	— 223	11.31
Greatest number of persons employed.....	2,181	2,025	— 156	7.15
Average number of persons employed.....	2,104	1,891	— 213	10.12
Average days in operation.....	288	298	+ 10	3.47

TABLE II—INVESTMENT.

Classification.	Capital invested in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Land.....	\$193,579 10	\$203,382 64	+ \$9,803 54	5.06
Buildings and fixtures.....	355,220 50	409,049 62	+ 53,829 12	15.15
Machinery, etc.,.....	190,725 27	207,349 12	+ 12,523 85	6.57
Cash and other capital.....	1,679,719 33	1,681,440 93	+ 1,721 60	0.10
Total.....	\$2,419,244 20	\$2,497,122 31	+ 77,878 11	3.22

TABLE III A—VALUE OF MATERIALS AND LABOR EMPLOYED, AND OF PRODUCT.

Classification.	Value of material used, wages and salaries paid in		Increase, +, or decrease, -, in 1905.	
	1904.	1905.	Amount.	Per cent
Raw material used	\$2,465,874 60	\$2,473,271 36	+ \$7,396 76	0.30
Other material used	82,326 54	109,901 21	+ 27,574 67	33.49
Wages	836,855 46	730,102 41	- 106,753 05	12.76
Salaries	275,791 71	255,991 09	- 19,800 63	7.18
Profit and minor expenses ..	793,671 77	799,683, 66	+ 6,011 89	0.76
Goods made and work done.	4,454,520 08	4,368,949 72	- 85,570 36	1.92

TABLE III B—ANALYSIS OF TABLE III A.

Classification.	1904.	1905.
Value of goods made and work done (gross product)	\$4,454,520 08	\$4,368,949 72
Value of stock used and other material consumed in production	2,548,201 14	2,583,172 57
Industry product (gross product less value of stock and material)	1,906,318 94	1,785,777 15
Wages and salaries (Labor's direct share of product)	1,112,647 17	986,093 49
Profit and minor expense fund, (industry product less wages)	793,671 77	799,683 66
Percentage of industry product paid in wages.....	Per cent. 59.37	Per cent. 55.23
Percentage of industry product devoted to profit and minor expenses	41.63	44.78

TABLE IV—AVERAGE CAPITAL, ETC., PER EMPLOYEE.

Classification.	Average capital, product, and yearly earnings in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent.
Average capital per employee	\$1,149 83	\$1,320 53	+ \$170 70	14.85
Average product per employee	2,117 17	2,310 39	+ 193 22	9.13
Average yearly earnings	397 74	336 09	— 11 65	2.93

TABLE V—RANGE OF EMPLOYMENT AND OF UNEMPLOYMENT.

Months.	Total no. of persons employed in		Percentages of			
	1904.	1905.	Employment in		Unemployment in	
			1904.	1905.	1904	1905.
January	1,972	1,749	90.42	86.37	9.58	13.63
February	2,056	1,778	94.27	87.70	5.73	12.30
March	2,110	1,853	96.74	91.51	3.26	8.49
April	2,130	1,913	97.66	94.47	2.34	5.53
May	2,103	1,851	96.42	91.41	3.58	8.59
June	2,108	1,843	96.65	91.01	3.35	8.99
July	2,063	1,833	94.59	93.23	5.41	6.77
August	2,158	1,933	89.84	95.46	1.06	4.54
September	2,181	2,025	100.—	100.—	.....	.....
October	2,174	1,979	99.67	97.73	0.33	2.27
November	2,141	1,991	98.17	98.32	1.83	1.68
December	2,057	1,894	94.31	93.53	5.69	6.47
Average	2,104	1,891	96.47	93.38	3.53	6.62

TABLE VI—OCCUPATIONS AND WAGES OF EMPLOYEES.

Occupations.	Total no. of persons.		Average hours per day.		Average wages per day.		Average wages per hour.		Increase, +, or decrease, —, per day in 1905.	
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	Amt. Per ct.	
									Amt.	Per ct.
Apprentices, female.....	5	4	9.50	9.62	\$.50	\$.54	\$.052	\$.056	+ \$.04	8.00
Basters, female.....	6	12	10	10	.583	.633	.058	.058	.....	.....
Binders, female.....	2	2	10	10	1.00	1.00	.10	.10	.....	.....
Boxers.....	2	1	9.50	10	1.00	1.00	.105	.10	.....	.....
Bushelers.....	.....	1	.....	10	.....	1.50	.....	.15	.....	.....
Buttonhole makers.....	1	1	10	10	4.50	4.50	.45	.45	.....	.....
Button sewers, female.....	7	7	10	10	.74	.829	.074	.082	+ .089	12.03
Carpenters.....	1	1	10	10	2.50	2.00	.25	.20	— .50	20.
Checkers, female.....	.....	2	.....	9.50	.....	1.345	.....	.141	.....	.....
Clerks.....	40	.....	.....	9.01	.....	1.889	.....	.209	.....	.....
Clerks, female.....	1	5	10	9	.83	2.032	.083	.226	+ 1.202	144.82
Cutters.....	86	117	9.61	9.80	2.341	2.697	.243	.275	+ .356	15.20
Designers.....	4	2	9.75	9	6.33	6.835	.65	.759	+ .505	7.98
Dressmakers.....	.....	18	.....	10	.....	1.418	.....	.141	.....	.....
Engineers.....	3	2	9.66	9	1.83	2.08	.189	.231	+ .25	13.11
Examiners.....	.....	2	.....	8	.....	2.415	.....	.301	.....	.....
Examiners, female.....	4	5	9.75	9.70	1.29	1.148	.132	.113	— .142	11.
Finishers.....	2	2	10	10	2.00	2.00	.20	.20	.....	.....
Finishers, female.....	46	47	9.93	10	.90	.812	.09	.081	— .088	9.77
Firemen.....	.....	2	.....	10	.....	1.50	.....	.15	.....	.....
Folders, female.....	.....	2	.....	9.50	.....	.58	.....	.061	.....	.....
Foremen.....	9	11	9.55	9.44	3.077	2.72	.322	.288	— .357	11.60
Forewomen.....	10	9	9.75	10	1.765	1.721	.181	.172	— .044	2.49
Helpers.....	159	102	9.61	9.40	.98	1.116	.102	.118	+ .136	13.87
Helpers, female.....	600	431	9.64	9.85	.856	.862	.083	.088	+ .006	1.70
Laborers.....	2	5	8	9	2.00	1.45	.25	.161	— .55	27.50
Machine operators.....	38	50	9.66	10	3.612	3.38	.374	.388	— .232	6.42
Machine operators, female.....	565	655	9.79	9.62	1.196	1.12	.122	.115	— .086	7.19
Machinists.....	7	9	9.85	10	2.50	2.814	.263	.281	+ .224	8.65
Messengers.....	.....	1	.....	10	.....	.58	.....	.058	.....	.....
Packers, female.....	4	4	10	10	1.062	1.287	.106	.128	+ .226	21.19
Piece workers female.....	136	51	10	10	1.024	.913	.102	.091	— .111	10.84
Pressers.....	24	26	9.88	10	2.107	2.04	.213	.204	— .037	3.18
Sewers.....	.....	3	.....	10	.....	.766	.....	.076	.....	.....
Sewers, female.....	116	104	9.25	9.79	.917	.86	.099	.087	— .067	6.22
Shipping clerks.....	12	5	9.41	10	1.625	1.90	.172	.19	+ .275	16.95
Stockkeepers.....	2	2	10	10	2.00	2.00	.20	.20	.....	.....
Stockkeepers, female.....	.....	2	.....	10	.....	2.50	.....	.25	.....	.....
Tailors.....	178	100	9.41	9.34	2.014	2.069	.214	.221	+ .055	2.73
Teamsters.....	2	1	10	10	1.67	1.65	.167	.165	— .02	1.19
Ticketers, female.....	.....	1	.....	8	.....	.84	.....	.105	.....	.....
Trimmers.....	2	2	10	9.75	2.00	1.255	.20	.127	— .745	37.25
Trimmers, female.....	1	1	10	10	1.33	1.33	.133	.133	.....	.....
Watchmen.....	4	2	9.50	10	1.937	1.75	2.04	.175	— .187	9.65
Total.....	2,041	1,882	9.67	9.71	1.252	1.304	.128	.134	+ .051	4.07

TABLE VII—CLASSIFICATION OF DAILY WAGES.

Classified daily wages, (inclusive).	Total number of persons employed.						Average wages per day.					
	Male.		Female.		Total.		Male.		Female.		Total.	
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.
\$0.33 or less.	1				1		\$0.33				\$0.33	
.34 to .41	4	2	9	10	13	12	.41	\$.41	\$.377	\$.385	.387	\$.389
.42 to .49			13	19	13	19			.456	.428	.455	.428
.50 to .58	26	11	60	98	86	109	.50	.551	.531	.532	.522	.533
.59 to .66	5	1	80	108	85	109	.658	.60	.663	.635	.647	.635
.67 to .74	7	9	27	38	34	47	.67	.677	.687	.683	.684	.682
.75 to .83	34	14	263	223	297	237	.774	.779	.776	.78	.767	.78
.84 to .91	2	4	135	136	137	140	.91	.90	.897	.883	.898	.884
.92 to .99			1	76	25	76		.92	.959	.933	.959	.932
1.00 to 1.08	29	25	304	335	333	360	1.011	1.00	1.003	1.004	1.003	1.003
1.09 to 1.16	4	7	294	69	298	76	1.16	1.18	1.119	1.108	1.12	1.11
1.17 to 1.24	1	5	26	48	27	53	1.17	1.176	1.20	1.197	1.198	1.196
1.25 to 1.33	29	34	75	80	104	114	1.25	1.276	1.276	1.279	1.268	1.277
1.34 to 1.41	11	19	11	16	23	35	1.395	1.397	1.368	1.378	1.381	1.388
1.42 to 1.49				1	1					1.44		1.44
1.50 to 1.58	97	34	62	95	159	129	1.503	1.502	1.50	1.503	1.502	1.502
1.59 to 1.66	31	26	2	8	33	34	1.656	1.652	1.65	1.615	1.655	1.643
1.67 to 1.74	1	11	11	13	12	24	1.67	1.693	1.67	1.693	1.67	1.693
1.75 to 1.83	18	15	8	18	26	33	1.787	1.809	1.82	1.754	1.797	1.779
1.84 to 1.91	3		2		5		1.90		1.90		1.90	
1.92 to 1.99		1		5		6		1.92		1.95		1.945
2.00 to 2.08	55	57	27	25	82	82	2.00	2.00	2.00	2.00	2.00	2.00
2.09 to 2.16	8	16		10	8	20	2.145	2.148		2.106	2.145	2.127
2.17 to 2.24		8	1		1	8		2.173	2.17		2.17	2.173
2.25 to 2.33	15	16	6	3	21	19	2.277	2.295	2.29	2.25	2.23	2.238
2.34 to 2.41	27	27	1		28	27	2.35	2.352	2.40		2.352	2.352
2.50 to 2.58	25	24	7	2	32	26	2.50	2.50	2.50	2.525	2.50	2.502
2.59 to 2.66		1			1			2.66				2.66
2.67 to 2.74	5	4			4	5		2.688	2.67		2.67	2.688
2.75 to 2.83	23	8		5	23	13	2.83	2.76		2.75	2.83	2.766
2.84 to 2.91		1			1			2.90				2.90
3.00 to 3.08	31	33	1	1	32	39	3.00	3.00	3.00	3.00	3.00	3.00
3.09 to 3.16		2			2			3.16				3.16
3.25 to 3.33	13	16		1	13	17	3.33	3.33		3.25	3.33	3.325
3.50 to 3.58	10	11			10	11	3.50	3.50			3.50	3.50
3.59 to 3.66	2	20			2	20	3.66	3.66			3.66	3.66
3.67 to 3.74		1			1	1		3.67				3.67
3.84 to 3.91	1	1			1	1	3.87	3.87			3.87	3.87
4.00 to 4.08	2	6			2	6	4.00	4.00			4.00	4.00
4.25 to 4.33	2	2			2	2	4.25	4.25			4.25	4.25
4.50 to 4.58	2	2			2	2	4.50	4.50			4.50	4.50
5.00 to 5.08	6	4			6	4	5.00	5.00			5.00	5.00
5.25 to 5.33	1	1			1	1	5.25	5.25			5.25	5.25
6.00 to 6.08	4	3			4	3	6.00	6.00			6.00	6.00
6.50 to 6.58		2			2	2		6.50				6.50
6.59 to 6.66	2				2		6.66				6.66	
6.67 to 6.74		1			1			6.67				6.67
7.00 to 7.08	3	4			3	4	7.00	7.00			7.00	7.00
7.50 to 7.58	1				1		7.50				7.50	
Total ..	536	490	1,505	1,392	2,041	1,882	\$1,932	\$2,161	\$1,009	\$1,009	\$1,252	\$1,303

Remarks.—This industry shows a loss for 1905, in spite of an increase in all items of investment, and in the average number of days of operation. An industry dependent as this is principally upon the labor of women and children is always likely to experience greater difficulty in securing and retaining its em-

ployees than an industry in which men only are employed. The inability to secure the necessary help may therefore be largely responsible for the loss sustained in 1905, although overproduction in preceding years may also have been a factor. In consequence of the large proportion of women and children employed the average wages received were very low. It is noticeable that men were employed largely in the accessory occupations, cutters and tailors being the chief exceptions. No marked change occurred in 1905 in the hours of labor for women or their average daily wages. The average daily wages of men showed a slight increase, but the greater irregularity of unemployment in the latter year caused a decrease of nearly 3 per cent. in the average yearly earnings.

16. CONFECTIONERY—15 ESTABLISHMENTS.

TABLE I—MANAGEMENT AND OPERATION.

Classification.	Number in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Number of private firms.....	7	5	— 2	28.57
Number of male partners.....	11	6	— 5	45.45
Number of female partners.....				
Total number of partners.....	11	6	— 5	45.45
Number of corporations.....	8	10	+ 2	25.00
Number of male stockholders.....	41	62	+ 21	51.22
Number of female stockholders.....	10	11	+ 1	10.—
Total number of stockholders.....	51	73	+ 22	43.14
Total number of partners and stockholders.....	62	79	+ 17	27.42
Smallest number of persons employed.....	822	798	— 24	2.92
Greatest number of persons employed.....	1,098	1,282	+184	16.76
Average number of persons employed.....	927	982	+ 55	5.93
Average days in operation.....	290	288	— 2	0.69

TABLE II—INVESTMENT.

Classification.	Capital invested in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Land	\$66,163 00	\$69,512 28	+ \$3,349 28	5.06
Buildings and fixtures.....	192,588 58	195,657 59	+ 3,069 01	1.59
Machinery, etc.	201,080 97	211,231 02	+ 10,150 05	5.05
Cash and other capital.....	565,518 69	712,211 69	+ 146,693 00	25.94
Total	\$1,025,351 24	\$1,188,612 58	+ \$163,261 34	15.92

TABLE III A—VALUE OF MATERIALS AND LABOR EMPLOYED, AND OF PRODUCT.

Classification.	Value of material used, wages and salaries paid in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Raw material used	\$1,294,259 41	\$1,403,559 12	+ \$109,299 71	8.45
Other material used	120,739 84	129,936 38	+ 9,196 54	7.62
Wages	244,304 82	257,533 96	+ 13,229 04	5.42
Salaries	183,870 88	204,303 94	+ 20,433 06	11.11
Profit and minor expenses....	249,030 37	268,737 33	+ 19,706 96	7.91
Goods made and work done..	\$2,092,205 32	\$2,264,070 63	+ \$171,865 31	8.21

TABLE III B—ANALYSIS OF TABLE III A.

Classification.	1904,	1905.
Goods made and work done (gross product).....	\$2,092,205 32	\$2,264,070 63
Value of stock used and material consumed in production	1,414,999 25	1,533,495 50
Industry product (gross production less value of stock and material)	677,206 07	730,575 13
Wages and salaries (Labor's direct share of product)	428,175 70	461,837 80
Profit and minor expense fund (industry product less wages)	249,030 37	278,737 33
Percentage of industry product paid in wages.....	63.23	63.05
Percentage of industry product devoted to profit and minor expenses	36.77	36.95

TABLE IV—AVERAGE CAPITAL, ETC., PER EMPLOYEE.

Classification.	Average capital, product, and yearly earnings in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent.
Average capital per employee.....	\$1,106 10	\$1,210 40	+ \$104 30	9.43
Average product per employee.....	2,256 96	2,305 57	+ 48 61	2.15
Average yearly earnings	263 54	262 25	— 1 29	0.49

TABLE V—RANGE OF EMPLOYMENT AND OF UNEMPLOYMENT.

Months.	Total no. of persons employed in		Percentages of			
			Employment in		Unemployment in	
	1904.	1905.	1904.	1905.	1904.	1905.
January	847	793	77.14	62.25	22.86	37.75
February	822	858	74.86	66.93	25.14	33.07
March	858	860	78.14	67.08	21.86	32.92
April	804	878	78.69	68.49	21.31	31.51
May	885	906	80.60	70.67	19.40	29.33
June	900	917	81.97	71.53	18.03	28.47
July	852	901	77.56	70.28	22.44	29.72
August	867	969	78.93	75.58	21.04	24.42
September	973	1,044	88.62	81.44	11.38	18.56
October	1,098	1,216	100.—	94.85	0.00	5.15
November	1,093	1,282	100.—	100.—	0.00	0.00
December	1,058	1,149	96.36	89.63	3.64	10.37
Average	927	982	84.43	76.60	15.57	23.40

TABLE VI—OCCUPATIONS AND WAGES OF EMPLOYEES.

Occupations.	Total no. of persons.		Average hours per day.		Average wages per day.		Average wages per hour.		Increase, +, or decrease, —, per day in 1905.		
	1904.	1905.	1904.	1905.	1904	1905.	1904.	1905.	Amt. Per ct.		
									Amt.	Per ct.	
Bakers	22	18	10.00	9.94	\$2.606	\$1.707	\$.261	\$.172	—	\$.899	34.50
Bakers, female		1		10.00		3.00		.30			
Boys	15		10.00		.557		.056				
Candy makers	81	81	9.96	9.95	2.269	2.288	.228	.239	+	.111	4.80
Candy makers' help- ers	8		10.00		.816		.082				
Candy makers' help- ers, female	3		10.00		.567		.057				
Carpenters	1	2	10.00	9.00	2.25	2.50	.225	.278	+	.25	11.11
Clerks	7	14	10.00	10.14	1.946	1.521	.195	.15	—	.425	21.84
Clerks, female	2	4	10.00	12.00	1.00	1.168	.10	.097	+	.168	16.80
Dippers, female	95	120	9.96	9.96	.709	.704	.712	.707	—	.005	0.71
Elevator men		2		10.00		1.25		1.25			
Engineers	1	3	10.00	10.00	3.75	3.25	.375	.325	—	.50	13.33
Firemen	1	2	10.00	10.00	2.00	1.50	.20	.15	—	.50	25.00
Foremen	1	3	10.00	10.00	3.00	3.00	.30	.30		.00	
Forewomen	2	4	10.00	10.00	1.50	1.313	.15	.131	—	.187	12.47
Helpers	186	222	9.99	9.98	.90	.854	.09	.086	—	.046	5.11
Helpers, female	423	505	10.00	10.00	.654	.671	.065	.067	+	.017	2.60
Ice-cream makers	3	4	10.00	10.00	2.67	2.375	.267	.238	—	.295	11.05
Machinists	1	1	10.00	10.00	2.75	2.75	.275	.275		.00	
Packers, female	196	119	10.00	10.00	.493	.493	.05	.049	—	.003	1.20
Porters	10	11	10.00	10.00	1.487	1.545	.149	.155	+	.06	4.04
Teamsters	2	2	10.00	11.00	1.835	1.675	.184	.167	—	.16	8.72
Watchmen	3	3	10.67	10.67	1.583	1.583	.148	.148		.00	
Total	1,063	1,121	9.99	10.00	.876	.889	.088	.089		.013	1.48

TABLE VII—CLASSIFICATION OF DAILY WAGES.

Classified daily wages, (inclusive).	Total number of persons employed.						Average wages per day.					
	Male.		Female.		Total.		Male.		Female.		Total.	
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.
\$0.33 or less.....			15	4	15	4			\$0.324	\$0.33	\$0.324	\$0.33
.34 to .41.....			74	22	74	22			.398	.381	.398	.381
.42 to .49.....	11	1	86	82	97	83	\$0.424	\$0.42	.435	.441	.434	.441
.50 to .58.....	25	34	242	304	267	338	.536	.516	.536	.536	.536	.534
.59 to .66.....	4	7	72	40	76	47	.623	.621	.626	.624	.626	.623
.67 to .74.....	24	22	61	58	55	80	.683	.681	.686	.683	.687	.683
.75 to .83.....	63	52	80	132	143	214	.778	.774	.781	.765	.78	.768
.84 to .91.....	17	2	30	28	47	30	.857	.88	.853	.878	.861	.878
.92 to .99.....	4	6	3	4	7	10	.93	.927	.933	.945	.931	.934
1.00 to 1.08.....	27	49	25	37	52	86	1.001	1.002	1.013	1.002	1.007	1.002
1.09 to 1.16.....		1		2		3		1.14		1.11		1.12
1.17 to 1.24.....	2	4	3	2	5	6	1.17	1.18	1.17	1.185	1.17	1.182
1.25 to 1.33.....	22	23	21	33	43	56	1.272	1.271	1.254	1.255	1.263	1.261
1.34 to 1.41.....			1		1	4		1.355	1.34		1.34	1.355
1.42 to 1.49.....			2	3		2	1.42	1.42	1.473		1.447	1.42
1.50 to 1.58.....	16	15	2	2	18	17	1.503	1.50	1.50	1.50	1.502	1.50
1.59 to 1.66.....			1		1				1.63		1.63	
1.67 to 1.74.....	14	10	2	2	16	12	1.67	1.67	1.67	1.67	1.67	1.67
1.75 to 1.83.....	8	15			8	15	1.79	1.825			1.79	1.825
2.00 to 2.08.....	30	28			36	28	2.004	2.00			2.004	2.00
2.09 to 2.16.....	1				1		2.15				2.15	
2.17 to 2.24.....	4	?			4	2	2.17	2.17			2.17	2.17
2.25 to 2.33.....	7	3			7	8	2.296	2.29			2.296	2.29
2.42 to 2.49.....		1				1		2.42				2.42
2.50 to 2.58.....	24	13			24	18	2.50	2.50			2.50	2.50
2.67 to 2.74.....	4	5			4	5	2.67	2.67			2.67	2.67
2.75 to 2.83.....	3	4			3	4	2.803	2.79			2.803	2.79
3.00 to 3.08.....	13	14		1	13	15	3.00	3.00		3.00	3.00	3.00
3.17 to 3.24.....	1				1		3.17				3.17	
3.25 to 3.33.....	2	3			2	3	3.33	3.303			3.33	3.303
3.42 to 3.49.....	1	1			1	1	3.46	3.46			3.46	3.46
3.50 to 3.58.....		1				1		3.50				3.50
3.67 to 3.74.....	1				1		3.97				3.67	
3.75 to 3.83.....	1	2			1	2	3.75	3.75			3.75	3.75
3.84 to 3.91.....	1	1			1	1	3.85	3.85			3.85	3.85
4.17 to 4.24.....	2	1			2	1	4.17	4.17			4.17	4.17
4.25 to 4.33.....		1				1		4.25				4.25
4.50 to 4.58.....	1	1			1	1	4.50	4.50			4.50	4.50
Total	342	368	721	753	1,063	1,121	1.41	1.361	.622	.658	.876	.889

Remarks.—A very satisfactory gain is exhibited by this industry in 1905. There was an increase of 16 per cent. in the capital invested, every item of investment being greater; and an increase of 8 per cent. in the value of the materials used, the total wages paid, and the output. A very fair proportion, 63 per cent., of the industry product was paid in wages and salaries each year. The average daily wages, however, were very low for both male and female employees. This was due to the large number of women and children employed. Two-thirds of the operatives each year were females. The difference be-

tween the wages paid male and those paid female help may be seen in the first six classes of Table VII. Thus, there were no males in the first two classes, while there were 89 females in 1904, and 26 in 1905. Again, in the third and fourth classes, there were 36 males in 1904 and 35 in 1905; the number of females in the same classes was 328 in 1904 and 386 in 1905. A similar result follows from a comparison of those in the next two classes. It may be seen also from this table that no female employees received higher wages than \$1.67 per day in 1904, and that only one received wages in excess of this amount in 1905. There was an increase of about 5 per cent. in the average daily wages paid female help in 1905. Employment was remarkably irregular in this industry, a maximum of 38 per cent. of unemployment occurring in January of 1905.

17. COOPERAGE—15 ESTABLISHMENTS.

TABLE I—MANAGEMENT AND OPERATION.

Classification.	Number in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount	Per cent
Number of private firms.....	8	8		
Number of male partners.....	8	8		
Number of female partners.....				
Total number of partners.....	8	8		
Number of corporations.....	7	7		
Number of male stockholders.....	30	28	— 2	6.67
Number of female stockholders.....	8	7	— 1	12.50
Total number of stockholders.....	38	35	— 3	7.90
Total number of partners and stockholders.....	46	43	— 3	6.52
Smallest number of persons employed.....	457	488	+ 31	6.78
Greatest number of persons employed.....	544	574	+ 30	5.52
Average number of persons employed.....	507	522	+ 15	2.96
Average days in operation.....	289	290	+ 1	0.35

TABLE II—INVESTMENT.

Classification.	Capital invested in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Land	\$160,822 26	\$165,447 26	+ \$4,625 00	2.88
Buildings and fixtures.....	183,983 55	193,006 18	+ 10,022 63	5.48
Machinery, etc.	89,507 08	89,965 72	+ 457 79	0.51
Cash and other capital.....	432,076 56	466,074 07	+ 13,997 51	3.10
Total	\$885,390 30	\$914,493 23	+ \$29,102 98	3.29

TABLE III A—VALUE OF MATERIALS AND LABOR EMPLOYED, AND OF PRODUCT.

Classification.	Value of material used, wages and salaries paid in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Raw material used.....	\$548,218 57	\$570,793 84	+ \$22,575 27	4.12
Other material used.....	25,496 09	27,379 78	+ 1,883 09	7.39
Wages	241,777 34	262,610 02	+ 20,832 68	8.62
Salaries	38,469 75	39,053 37	+ 583 62	1.52
Profit and minor expenses....	141,716,92	114,418 49	-- 27,298 43	19.26
Goods made and work done..	\$995,679 27	\$1,014,255 50	+ \$18,576 23	1.87

TABLE III B—ANALYSIS OF TABLE III A.

Classification.	1904.	1905.
Value of goods made and work done (gross product)	\$995,679 27	\$1,014,255 50
Value of stock used and other material consumed in production	573,715 26	598,173 62
Industry product (gross product less value of stock and material)	421,964 01	416,081 88
Wages and salaries (Labor's direct share of product)	280,247 09	301,663 39
Profit and minor expense fund (industry product less wages)	141,716 92	114,418 49
Percentage of industry product paid in wages.....	Per cent. 66.41	Per cent. 72.50
Percentage of industry product devoted to profit and minor expenses	33.59	27.50

TABLE IV—AVERAGE CAPITAL, ETC., PER EMPLOYEE.

Classification.	Average capital, product and yearly earnings in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent.
Average capital per employee.....	\$1,746 33	\$1,751 90	+ \$5 57	0.33
Average product per employee.....	1,963 83	1,943 02	-- 20 84	1.06
Average yearly earnings	478 85	503 08	+ 26 23	5.50

TABLE V—RANGE OF EMPLOYMENT AND OF UNEMPLOYMENT.

Months.	Total no. of persons employed in		Percentages of			
			Employment in		Unemployment in	
	1904	1905.	1904.	1905	1904.	1905.
January	498	509	91.54	88.68	8.46	11.32
February	511	528	93.93	91.99	6.07	8.01
March	531	549	97.61	95.65	2.39	4.35
April	537	555	98.71	96.68	1.29	3.32
May	529	520	97.24	90.59	2.76	9.41
June	528	507	97.06	88.33	2.94	11.67
July	544	491	100.00	85.54	0.00	14.46
August	464	574	85.29	100.00	14.71	0.00
September	457	515	84.01	89.72	15.99	10.28
October	481	497	88.42	86.59	11.53	13.41
November	501	488	92.10	84.63	7.90	15.37
December	500	529	91.91	92.16	8.09	7.84
Average	507	522	93.20	90.94	6.80	9.06

TABLE VI—OCCUPATIONS AND WAGES OF EMPLOYEES.

Occupations.	Total no. of persons.		Average hours per day.		Average wages per day.		Average wages per hour.		Increase, +, or decrease, —, per day in 1905.		
	1904.	1905.	1904.	1905.	1901.	1905.	1904.	1905.	Amt. Per ct.		
Blacksmiths	2	2	10.00	10.00	.....	\$2.00	.....	\$.20	.....	.....
Boys	3	3	8.00	10.00	\$1.00	1.00	\$.125	.10	.....	.....
Carpenters	1	1	10.00	.....	1.83	.....	.183	.....	.....	.....
Cheese box makers	2	2	10.00	.....	2.00	.....	.20	.....	.....	.....
Coopers	221	237	9.36	9.41	2.237	2.298	.239	.244	+	\$.051	2.73
Engineers	4	1	10.00	8.00	2.16	2.00	.216	.25	—	.16	7.41
Firemen	3	7	10.00	11.14	1.953	2.036	.195	.183	+	.083	4.25
Foremen	12	5	10.00	9.20	2.278	2.40	.228	.261	+	.122	5.36
Gluers	4	10	10.00	10.00	1.25	1.25	.125	.125	.....	.....	.....
Grinders	1	1	8.00	8.00	2.50	2.80	.313	.350	+	.30	12.00
Helpers	65	54	9.58	9.63	1.376	1.347	.144	.14	—	.029	2.11
Joiners	1	6	10.00	10.00	2.00	1.33	.20	.133	—	.67	33.50
Laborers	16	54	10.00	9.35	1.683	1.444	.168	.154	—	.239	14.20
Machine tenders	86	96	8.98	8.52	2.388	2.427	.266	.285	+	.039	1.63
Mill hands	76	.....	10.00	.....	1.331	.....	.133	.....	.....	.....	.....
Packers	6	.....	10.00	.....	2.19	.....	.219	.....	.....	.....	.....
Packers, female .....	.....	2	.....	8.00	.....	.60	.....	.075	.....	.....	.....
Piece workers	34	.....	10.00	.....	1.956	.....	.196	.....	.....	.....	.....
Sawyers	6	14	10.00	10.00	1.763	1.696	.176	.17	—	.067	3.80
Shipping clerks .....	.....	1	.....	10.00	.....	2.00	.....	.20	.....	.....	.....
Stockmen	5	.....	10.00	.....	1.80	.....	.18	.....	.....	.....	.....
Teamsters	5	4	10.00	10.00	1.534	1.75	.153	.175	+	.216	14.03
Watchmen	3	2	10.67	12.00	1.537	1.835	.149	.153	+	.248	15.63
Total	552	501	9.53	9.33	\$1.966	\$2.053	\$.206	\$.22	+	\$.087	4.43

TABLE VII—CLASSIFICATION OF DAILY WAGES.

Classified daily wages. (inclusive).	Total number of persons employed.						Average wages per day.					
	Male.		Female.		Total.		Male.		Female.		Total.	
	1904.	1905.	1904.	1905.	1901.	1905	1904.	1905.	1904.	1905.	1904	1905.
\$0.59 to \$0.66.				2		2					\$0.60	\$0.60
.75 to .83.	12	4			12	4	\$.75	\$.75			.75	.75
1.00 to 1.08.	12	17			12	17	1.00	1.00			1.00	1.00
1.09 to 1.16	5				5		1.15				1.15	
1.17 to 1.24.	3	2			3	2	1.20	1.17			1.20	1.17
1.25 to 1.33.	51	61			51	61	1.277	1.278			1.277	1.278
1.34 to 1.41.	3	2			3	2	1.35	1.38			1.35	1.38
1.42 to 1.49.	14				14		1.42				1.42	
1.50 to 1.58.	74	60			74	60	1.503	1.50			1.503	1.50
1.59 to 1.66.		6				6		1.60				1.60
1.67 to 1.74.	36	17			36	17	1.672	1.677			1.672	1.677
1.75 to 1.83.	33	54			23	54	1.767	1.753			1.767	1.753
1.84 to 1.91.	12	8			12	8	1.871	1.854			1.871	1.854
1.92 to 1.99.	4				4		1.93				1.93	
2.00 to 2.08.	48	29			48	29	2.00	2.00			2.00	2.00
2.09 to 2.16.	3				3		2.13				2.13	
2.17 to 2.24.	2				2		2.17				2.17	
2.25 to 2.33.	124	55			124	55	2.252	2.25			2.252	2.25
2.50 to 2.58.	53	42			53	42	2.502	2.50			2.502	2.50
2.67 to 2.74.	2	1			2	1	2.70	2.67			2.70	2.67
2.75 to 2.83.	39	123			39	123	2.80	2.778			2.80	2.778
2.84 to 2.91.	2				2		2.90				2.90	
3.00 to 3.08.	9	14			9	14	3.00	3.00			3.00	3.00
3.25 to 3.33.	3	2			3	2	3.30	3.25			3.30	3.25
3.50 to 3.58.	5	2			5	2	3.50	3.50			3.50	3.50
3.75 to 3.83.	1				1		3.80				3.80	
4.34 to 4.41.	2				2		4.35				4.35	
Total ...	552	499		2	552	501	\$1.966	\$2.059		\$0.60	\$1.966	\$2.053

Remarks.—A moderate growth of this industry is indicated by an increase of 3 per cent. in the total capital invested, of 5 per cent. in the materials used, of 8 per cent. in the total wages paid, and of 2 per cent. in the output. The increase of over 5 per cent. in the amount invested in buildings points to the establishment of the industry on a more permanent basis. The average number of employees was 3 per cent. greater in 1905, while the average yearly earnings showed an increase of over 5 per cent. A large proportion of the industry product was paid in wages each year,—66 per cent. in 1904, and over 72 per cent. the following year. Employment was slightly less regular in 1905. No female help was employed in this industry, with the exception of two persons working as packers in 1905. These two worked eight hours per day. The average hours for men were about 12 minutes shorter in 1905 than in the preceding year.

18. COTTON AND LINEN—11 ESTABLISHMENTS.

TABLE I—MANAGEMENT AND OPERATION.

Classification.	Number in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Number of private firms	2	1	— 1	50.00
Number of male partners	4	2	— 2	50.00
Number of female partners	4	2	— 2	50.00
Total number of partners	9	10	+ 1	11.11
Number of corporations	180	189	+ 9	5.00
Number of male stockholders	91	89	— 2	2.20
Number of female stockholders	271	278	+ 7	2.56
Total number of stockholders	275	280	+ 5	1.82
Total number of partners and stockholders	604	534	+ 230	38.08
Smallest number of persons employed	975	1,047	+ 72	7.39
Greatest number of persons employed	791	936	+ 145	18.33
Average number of persons employed	258	291	+ 33	12.79
Average days in operation				

TABLE II—INVESTMENT.

Classification.	Capital invested in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Land	\$159,740 65	\$173,769 54	+ \$14,028 89	8.78
Buildings and fixtures	217,656 85	241,864 22	+ 24,207 37	11.12
Machinery, etc.	379,229 20	439,046 91	+ 59,817 71	15.77
Cash and other capital	950,837 99	1,149,657 81	+ 198,819 82	20.91
Total	\$1,707,464 69	\$2,004,338 48	+\$296,873 79	17.39

TABLE III A—VALUE OF MATERIALS AND LABOR EMPLOYED, AND OF PRODUCT.

Classification.	Value of material used, wages and salaries paid in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Raw material used	\$1,473,522 69	\$1,791,245 26	+ \$317,722 57	21.56
Other material used	132,915 01	177,184 75	+ 44,269 74	33.31
Wages	238,665 89	273,149 62	+ 34,483 73	14.43
Salaries	96,937 41	104,381 65	+ 7,444 24	7.68
Profit and minor expenses	309,865 40	320,608 83	+ 10,743 43	3.47
Goods made and work done	2,254,934 40	2,666,566 61	+ 411,632 21	18.26

TABLE III B—ANALYSIS OF TABLE III A.

Classification.	1904.	1905.
Value of goods made and work done (gross product)	\$2,254,934 40	\$2,666,506 61
Value of stock used and other material consumed in production	1,606,437 70	1,968,430 01
Industry product (gross product less value of stock and material)	648,496 70	698,136 60
Wages and salaries (Labor's direct share of product)	338,633 30	377,528 27
Profit and minor expense fund (industry product less wages)	309,863 40	320,638 33
Percentage of industry product paid in wages	Per cent. 52.22	Per cent. 54.08
Percentage of industry product devoted to profit and minor expenses	47.78	45.92

TABLE IV—AVERAGE CAPITAL, ETC., PER EMPLOYEE.

Classification.	Average capital, product and yearly earnings in		Increase, +, or decrease, -, in 1905.	
	1904.	1905.	Amount.	Per cent.
Average capital per employee	\$2,158 62	\$2,141 39	— \$17 23	0.80
Average product per employee	2,850 74	2,848 90	— 1.84	0.06
Average yearly earnings	301 76	291 82	— 9.94	3.29

TABLE V—RANGE OF EMPLOYMENT AND OF UNEMPLOYMENT.

Months.	Total no. of persons employed in		Percentages of			
	1904.	1905.	Employment in		Unemployment in	
			1904.	1905.	1904	1905.
January	912	874	96.54	83.48	6.46	16.52
February	975	907	100.—	86.63	.....	13.37
March	968	881	99.28	84.15	0.72	15.85
April	812	964	83.28	92.07	16.72	7.93
May	822	1,047	84.31	100.—	15.69	.....
June	813	993	83.39	94.85	16.61	5.15
July	688	885	75.57	84.53	29.43	15.47
August	673	834	69.03	79.66	30.97	20.34
September	647	912	66.36	87.10	33.64	12.90
October	604	929	61.95	83.73	38.05	11.27
November	672	936	63.92	95.13	31.08	4.87
December	900	1,007	92.31	96.18	7.69	3.82
Average	791	936	81.13	89.40	18.87	10.60

TABLE VI—OCCUPATIONS AND WAGES OF EMPLOYEES.

Occupations.	Total no. of persons.		Average hours per day.		Average wages per day.		Average wages per hour.		Increase, +, or decrease, —, per day in 1905.		
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	Amt.	Per ct.	
Assemblers	1		10.00		\$1.50		\$0.15				
Assorters, female	4	1	10	10	.963	\$1.00	.096	\$0.10	+	\$0.037	3.84
Awning hangers	5	6	10	10	2.00	1.958	.20	.196	—	.042	2.10
Awning makers	2	2	10	10	1.50	2.875	.15	.288	+	1.375	91.67
Ballers, female		13		10		1.154		.115			
Beamers, female		1		10		.83		.083			
Blacksmiths	2	2	10	10	1.875	1.875	.188	.188			
Bleachers		9		10		1.472		.147			
Boys	3	2	10	10	1.25	1.625	.125	.163	+	.375	30.00
Carders	10	9	10	10	1.50	1.75	.15	.175	+	.25	16.67
Carpenters	4	3	9.75	9.67	2.058	2.027	.211	.21	—	.031	1.51
Cutters	4	6	10	10	1.50	1.417	.15	.142	—	.083	5.53
Dyers	8	5	10	10	1.50	1.50	.15	.15			
Engineers	4	5	10.25	10.20	2.355	2.484	.23	.244	+	.120	5.48
Engravers	1	1	10	10	3.50	4.00	.35	.40	+	.50	14.29
Feeders	4	2	10	10	6.75	.485	.068	.049	—	.19	28.15
Feeders, female	24	22	10	10	.723	.955	.072	.096	+	.232	32.09
Finishers		1		10		2.00		.20			
Firemen		2		10.50		1.75		.167			
Foremen	17	8	10.15	10	2.511	2.326	.247	.283	+	.315	12.54
Forewomen	4	3	10	10	1.263	1.50	.126	.15	+	.237	18.77
Hammock makers		2		10		1.25		.125			
Hammock makers female	46	10	10	10	.67	.67	.067	.037			
Helpers	9	47	10	10	2.276	1.40	.228	.14	—	.876	38.49
Helpers, female	6	30	10	10	.75	.687	.075	.069	—	.063	8.40
Inspectors, female	4	21	10	10	1.00	.904	.10	.09	—	.096	9.60
Laborers	135	106	10.46	10.41	1.133	1.393	.107	.125	+	.175	15.58
Laborers, female	145	155	10.64	10.67	.853	.902	.08	.085	+	.049	5.74
Lappers	10	4	10	10	1.50	1.50	.15	.15			
Machine tenders	34	7	10	10	1.119	1.464	.112	.146	+	.345	30.83
Machine tenders, female	52	27	10	10	.711	.734	.071	.073	+	.023	3.23
Machinists	7	8	10	10.13	1.957	2.406	.196	.238	+	.449	22.94
Menders, female	6	3	10	10	1.00	1.00	.10	.10			
Mattress makers		3		10		2.00		.20			
Mattress makers, female		1		10		1.00		.10			
Nailers, female	5	3	10	10	1.19	1.143	.119	.114	—	.047	3.95
Net makers	29	25	10	10	1.00	1.00	.10	.10			
Net makers, female	154	76	10	10	.75	.75	.075	.075			
Packers		5		10		1.634		.163			
Packers, female		2		10		1.00		.10			
Painters		2		10		1.375		.138			
Piece workers	2		10		.95		.095				
Piece workers, female	85	87	10	10	1.115	1.115	.112	.112			
Ravelers, female	5	5	10	10	.732	.618	.072	.062	—	.104	14.40
Reelers, female		1		10		1.00		.10			
Repairers	4		10		2.00		.20				
Rope makers	13	10	10	10	1.84	.85	.084	.085	+	.01	1.19
Rubbers	1		10		.50		.15				
Sail makers	10	7	10	10	2.55	2.571	.255	.257	+	.021	0.82
Sewers, female	43	65	10	10	1.087	.993	.109	.099	—	.094	8.65
Shipping clerks	4	9	10	10	1.638	1.676	.167	.168	+	.008	0.48
Spinners	8	16	10	10	1.60	1.344	.16	.134	—	.256	16.00
Spinners, female	35	15	10	10	1.00	.89	.10	.089	—	.11	11.00
Splint pullers, female	6		10		.983		.098				
Teamsters	3	5	10	10	1.967	1.80	.197	.18	—	0.167	8.40
Trimmers, female		1		10		.65		.065			
Twisters, female	1		10		.50		.05				
Typesetters	2	2	10	10	1.85	1.85	.185	.185			
Typesetters, female	3	3	10	10	1.15	1.20	.115	.12	+	.05	4.35
Warpers, female	1	1	10	10	.80	1.00	.08	.10	+	.20	25.00
Watchmen	5	4	11.40	11.25	1.434	1.498	.136	.133	+	.061	4.46
Weavers	33	27	10.03	10	1.269	1.247	.127	.125	—	.022	1.73
Weavers, female	11	45	10	10	1.194	.81	.119	.081	—	.381	32.16
Winders, female	5	16	10	10	1.118	.955	.112	.055	—	.568	50.81
Wood workers		2		10		1.50		.15			
Yardmen	1		10		1.50		.15				
Total	1,020	961	10.16	10.16	\$1.050	\$1.111	\$.104	\$.109	+	\$.052	4.91

TABLE VII—CLASSIFICATION OF DAILY WAGES.

Classified daily wages, (inclusive).	Total number of persons employed.						Average wages per day.					
	Male.		Female.		Total.		Male.		Female.		Total.	
	1904	1905	1904	1905	1904	1905	1904	1905	1904	1905	1904	1905
\$0.33 or less.	1	2	3	3	0.14	0.235	0.203					
.34 to .41.	4	3	1	5	.40	.377	.40	.35	.40	.40	.37	
.42 to .49.	4	7	17	7	21	.45	.426	.429	.426	.426	.433	
.50 to .58.	13	9	27	25	34	.50	.50	.512	.525	.508	.518	
.59 to .66.	20	2	26	35	46	.603	.65	.608	.615	.605	.616	
.67 to .74.	6	1	72	25	78	.26	.67	.676	.68	.678	.677	
.75 to .83.	22	10	258	181	280	.784	.783	.76	.763	.762	.764	
.84 to .91.	15	16	24	42	39	.841	.856	.873	.859	.861	.858	
.92 to .99.	4	5	4	5	5			.925	.946	.925	.946	
1.00 to 1.08.	62	41	92	177	154	218	1.00	1.00	1.001	1.00	1.001	1.00
1.09 to 1.16.	32	3	47	18	79	21	1.124	1.10	1.105	1.103	1.113	1.103
1.17 to 1.24.	1	19	19	19	20		1.24	1.191	1.208	1.191	1.21	
1.25 to 1.33.	16	74	38	34	54	108	1.25	1.275	1.261	1.266	1.258	1.271
1.34 to 1.41.	3	4	4	2	7	6	1.383	1.35	1.38	1.38	1.381	1.36
1.42 to 1.49.	1	5		5	1		1.47	1.452		1.452	1.47	
1.50 to 1.58.	63	89	12	12	75	101	1.50	1.50	1.50	1.521	1.50	1.502
1.59 to 1.66.	23	2	2	2	25	2	1.633		1.615	1.65	1.631	1.65
1.67 to 1.74.	10	2	3	3	13	5	1.673	1.685	1.697	1.69	1.678	1.688
1.75 to 1.83.	26	32	4	1	30	33	1.759	1.78	1.75	1.75	1.758	1.779
1.84 to 1.91.	6	5		3	6	8	1.863	1.88		1.863	1.863	1.874
1.92 to 1.99.			1		1				1.92		1.92	1.92
2.00 to 2.08.	16	14		2	16	16	2.003	2.00		2.00	2.003	2.00
2.09 to 2.16.	2	3			2	3	2.10	2.117			2.10	2.117
2.25 to 2.33.	5	7			5	7	2.25	2.25			2.25	2.25
2.50 to 2.58.	14	14			14	14	2.50	2.50			2.50	2.50
2.67 to 2.74.	2	1			2	1	2.685	2.67			2.685	2.67
2.75 to 2.83.	3	2			3	2	2.75	2.75			2.75	2.75
3.00 to 3.08.	5	11			5	11	3.00	3.00			3.00	3.00
3.09 to 3.16.	1				1		3.15				3.15	
3.25 to 3.33.	3	1			3	1	3.303	3.25			3.303	3.25
3.50 to 3.58.	3				3		3.50				3.50	
4.00 to 4.08.	1				1		4.00				4.00	
4.25 to 4.33.	2				2		4.25				4.25	
Total ...	375	354	645	607	1,020	961	\$1.372	\$1.478	\$.873	\$.896	\$1.059	\$1.111

Remarks.—The tables show a very satisfactory gain in 1905 for this industry. Thus there was an increase of from 13 per cent. to 22 per cent. in the amount of capital invested, the average number of persons employed, the materials used, the total sum paid in wages and salaries, the average number of days of operation, and the total output. There was an apparent increase in the average daily wages paid, according to Table VI. But employment was somewhat irregular each year, and in consequence there was actually a slight decrease in the average daily wages paid throughout the year, as is seen from the decrease of 3 per cent. in the average yearly earnings. This indicates that in 1905 those employees who received the better wages were on the whole employed for a shorter period than those receiving

lower wages. The average daily wages paid in this industry were very low, owing chiefly to the fact that about three-fifths of the employees were women. Female help was employed not only in several of the minor occupations but also in many of the most important. The average hours of labor for both men and women were slightly over ten per day.

19. CREAMERIES—24 ESTABLISHMENTS.

TABLE I—MANAGEMENT AND OPERATION.

Classification.	Number in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Number of private firms.....	7	7		
Number of male partners.....	14	12	— 2	14.29
Number of female partners.....				
Total number of partners.....	14	12	— 2	14.29
Number of corporations.....	17	17		
Number of male stockholders.....	1,035	1,188	+ 153	14.78
Number of female stockholders.....	64	76	+ 12	18.75
Total number of stockholders.....	1,099	1,264	+ 165	15.01
Total number of partners and stockholders.....	1,113	1,276	+ 163	14.65
Smallest number of persons employed.....	84	122	+ 38	45.24
Greatest number of persons employed.....	117	143	+ 31	26.50
Average number of persons employed.....	99	134	+ 35	35.35
Average days in operation.....	299	301	+ 2	0.67

TABLE II—INVESTMENT.

Classification.	Capital invested in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Land.....	\$19,803 37	\$20,510 00	+ \$706 63	3.57
Buildings and fixtures.....	108,528 09	110,665 33	+ 2,137 24	1.97
Machinery, etc.....	69,698 29	83,785 98	+ 14,087 69	20.21
Cash and other capital.....	119,983 52	105,082 78	— 14,900 74	12.42
Total.....	\$318,013 27	\$320,044 09	+ 2,030 82	0.64

TABLE III A—VALUE OF MATERIALS AND LABOR EMPLOYED, AND OF PRODUCT.

Classification.	Value of material used, wages and salaries paid in		Increase, +, or decrease, —, in 1905	
	1904.	1905.	Amount.	Per cent
Raw material used	\$748,545 86	\$1,038,231 17	+ \$289,685 31	38.70
Other material used	50,881 53	52,116 36	+ 1,234 83	2.43
Wages	35,702 77	75,414 57	+ 19,711 80	35.39
Salaries	19,044 42	21,232 30	+ 2,187 88	11.49
Profit and minor expenses....	245,738 67	337,989 09	+ 92,250 42	37.54
Goods made and work done..	\$1,119,913 25	\$1,524,933 49	+ \$405,070 24	36.17

TABLE III B—ANALYSIS OF TABLE III A.

Classification.	1904.	1905.
Goods made and work done (gross product).....	\$1,119,913 25	\$1,524,933 49
Value of stock used and material consumed in production	799,427 39	1,090,347 53
Industry product (gross production less value of stock and material)	320,485 86	434,635 96
Wages and salaries (Labor's direct share of product)	74,747 19	96,646 87
Profit and minor expense fund (industry product less wages)	245,738 67	337,989 09
Percentage of industry product paid in wages.....	Per cent. 23.32	Per cent. 22.24
Percentage of industry product devoted to profit and minor expenses	76.63	77.76

TABLE IV—AVERAGE CAPITAL, ETC., PER EMPLOYEE.

Classification.	Average capital, product and yearly earnings in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent.
Average capital per employee.....	\$3,212 25	\$2,389 39	— \$823 86	25.65
Average produce per employee.....	11,312 26	11,380 47	+ 68 21	0.60
Average yearly earnings	562 65	562 80	+ 0 15	0.03

TABLE V—RANGE OF EMPLOYMENT AND OF UNEMPLOYMENT.

Months.	Total no. of persons employed in		Percentages of			
			Employment in		Unemployment in	
	1904.	1905.	1904.	1905.	1904.	1905.
January	84	123	71.79	83.11	28.21	16.89
February	84	122	71.79	82.43	28.21	17.57
March	88	123	75.21	83.11	24.79	16.89
April	98	134	83.76	90.54	16.24	9.46
May	104	143	88.89	96.62	11.11	3.28
June	112	148	95.73	100.—	4.27	0.00
July	117	148	100.—	100.—	0.00	0.00
August	108	142	92.31	95.95	7.69	4.05
September	104	139	88.89	93.92	11.11	6.08
October	100	127	85.47	85.81	14.53	14.19
November	95	124	81.20	83.78	18.80	16.22
December	89	129	76.07	87.16	23.93	12.84
Average	99	134	84.62	90.54	15.38	9.46

TABLE VI— OCCUPATIONS AND WAGES OF EMPLOYEES.

Occupations.	Total no. of persons.		Average hours per day.		Average wages per day.		Average wages per hour.		Increase, +, or decrease, —, per day in 1905.			
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	Amt.	Per ct.		
	Butter makers	38	42	9.74	10	\$2.02	\$2.097	\$.213	\$.210	+	\$.057	2.82
Cream handlers	8	8	10	10	2.30	2.419	.23	.242	+	.045	19.57	
Foremen	2	1	10	10	1.182	1.274	.126	.127	+	.002	7.78	
Helpers	18	25	9.39	10	.....	2.00	.....	.20	.....	.....	.....
Ice cream makers.....	1	1	10	10	1.64	1.543	.164	.154	—	.097	5.91	
Laborers	22	4	10	10	.....	1.30	.....	.13	.....	.....	.....
Separators	1	10	1.225	1.585	.137	.156	+	.360	29.39
Skimmers	15	13	8.93	10.15	.....	2.217	.....	.202	.....	.....	.....
Teamsters	6	.....	11	.....	.....	.....	.....	.....	.....	.....	.....
Total and average	101	101	9.07	9.43	\$1.687	\$1.813	\$.186	\$.192	+	\$.126	7.47	

TABLE VII—CLASSIFICATION OF DAILY WAGES.

Classified by daily wages, (inclusive).	Total number of persons employed.						Average wages per day.					
	Male.		Female.		Total.		Male.		Female.		Total.	
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.
\$.59 to \$.66.	1	1	.....	.....	1	1	2.65	\$.65	.....	.....	\$.65	\$.65
.75 to .83.	4	1	.....	.....	4	1	.756	.75	.....	.....	.756	.75
1.00 to 1.08.	17	9	.....	.....	17	9	1.042	1.00	.....	.....	1.042	1.00
1.09 to 1.16.	.....	1	.....	.....	.....	1	.....	1.10	.....	.....	.....	1.10
1.17 to 1.24.	2	.....	.....	.....	2	.....	.....	1.23	.....	.....	.....	1.23
1.25 to 1.33.	3	11	.....	.....	3	11	1.277	1.275	.....	.....	1.277	1.275
1.34 to 1.41.	2	.....	.....	.....	2	.....	.....	1.40	.....	.....	.....	1.40
1.50 to 1.58.	8	116	.....	.....	8	116	1.50	1.50	.....	.....	1.50	1.50
1.59 to 1.66.	7	2	.....	.....	7	2	1.651	1.62	.....	.....	1.651	1.62
1.67 to 1.74.	8	9	.....	.....	8	9	1.695	1.67	.....	.....	1.695	1.67
1.75 to 1.83.	16	2	.....	.....	16	2	1.765	1.79	.....	.....	1.765	1.79
1.92 to 1.99.	3	2	.....	.....	3	2	1.953	1.97	.....	.....	1.953	1.97
2.00 to 2.08.	15	28	.....	.....	15	28	2.005	2.00	.....	.....	2.005	2.00
2.17 to 2.24.	1	.....	.....	.....	1	.....	.....	2.24	.....	.....	.....	2.24
2.25 to 2.33.	7	4	.....	.....	7	4	2.303	2.308	.....	.....	2.303	2.308
2.50 to 2.58.	.....	2	.....	.....	.....	2	.....	2.525	.....	.....	.....	2.525
2.59 to 2.66.	1	1	.....	.....	1	1	2.60	2.65	.....	.....	2.60	2.65
2.67 to 2.74.	3	5	.....	.....	3	5	2.72	2.72	.....	.....	2.72	2.72
2.75 to 2.83.	1	3	.....	.....	1	3	2.88	2.75	.....	.....	2.88	2.75
3.00 to 3.08.	1	3	.....	.....	1	3	3.00	3.00	.....	.....	3.00	3.00
3.59 to 3.65.	1	.....	.....	.....	1	.....	3.66	.....	.....	.....	3.66	.....
4.00 to 4.08.	.....	1	.....	.....	.....	1	.....	4.00	.....	.....	.....	4.00
Total and average	101	101	.....	.....	101	101	1.687	1.813	.....	.....	1.687	1.813

Remarks.—It is to be regretted that reports were received from so small a number of the creameries of the state, especially as Wisconsin ranks as the second dairy state in the union. According to the report of the Dairy and Food Commission for 1905, there were in that year 1,017 creameries in the state, with a total output valued at \$19,000,000. Only a very partial idea of this industry can be obtained therefore from the foregoing tables, in which but 24 establishments are compared. For the establishments which reported, there was a large increase in the average number of employees, in the total wages paid, the material used, and the output. Only 23 per cent, a very small proportion, of the value of the industry product was paid in wages each year. Employment was very irregular, owing to the decrease in the supply of milk each winter, as compared with the amount furnished during the summer months. June and July were naturally the months of maximum employment. No female help was employed in any of the establishments that reported.

20. DYEING AND CLEANING—5 ESTABLISHMENTS.

TABLE I—MANAGEMENT AND OPERATION.

Classification.	Number in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Number of private firms.....	4	4		
Number of male partners	8	4	— 4	50.00
Number of female partners	1		— 1	100.00
Total number of partners.....	9	4	— 5	55.56
Number of corporations.....	1	1		
Number of male stockholders.....	3	4	+ 1	33.33
Number of female stockholders.....				
Total number of stockholders.....	3	4	+ 1	33.33
Total number of partners and stockholders.....	12	8	— 4	33.33
Smallest number of persons employed.....	153	161	+ 8	5.23
Greatest number of persons employed.....	180	192	+ 12	6.67
Average number of persons employed.....	165	176	+ 11	6.67
Average days in operation	302	306	+ 4	1.32

TABLE II—INVESTMENT.

Classification.	Capital invested in		Increase, +, or decrease, —, in 1905.	
	1904	1905.	Amount.	Per cent
Land	\$5,000 00	\$5,400 00	+ \$400 00	8.00
Buildings and fixtures	36,768 74	36,768 74		
Machinery, etc.	47,616 02	48,093 80	+ 477 78	1.00
Cash and other capital.....	30,303 27	29,752 88	— 550 39	1.82
Total	\$119,688 03	\$120,015 42	+ \$327 39	0.27

TABLE III A—VALUE OF MATERIALS AND LABOR EMPLOYED, AND OF PRODUCT.

Classification.	Value of material used, wages and salaries paid in		Increase, +, or decrease, -, in 1905.	
	1904.	1905.	Amount.	Per cent
Raw material used	\$20,049 27	\$20,040 09	- \$9 18	0.05
Other material used.....	34,165 99	34,274 01	+ 108 02	0.32
Wages	52,268 00	56,006 85	+ 4,340 85	8.31
Salaries	22,905 60	22,390 08	- 575 52	2.51
Profit and minor expenses....	32,688 50	37,494 49	+ 4,805 99	14.70
Goods made and work done..	\$162,135 36	\$170,805 52	+ 8,670 16	5.35

TABLE III B—ANALYSIS OF TABLE III A.

Classification,	1904.	1905.
Goods made and work done (gross product)	\$162,135 36	\$170,805 52
Value of stock used and material consumed in production	54,215 26	54,314 10
Industry product (gross production less value of stock and material)	107,920 10	116,491 42
Wages and salaries (Labor's direct share of product)	75,231 00	78,996 93
Profit and minor expense fund (industry product less wages)	32,688 50	37,494 49
	Per cent.	Per cent.
Percentage of industry product paid in wages.....	69.71	67.81
Percentage of industry product devoted to profit and minor expenses	30 29	32.19

TABLE IV—AVERAGE CAPITAL, ETC., PER EMPLOYEE.

Classification.	Average capital, product and yearly earnings in		Increase, +, or decrease, -, in 1905.	
	1904.	1905.	Amount.	Per cent.
Average capital per employee.....	\$725 38	\$681 91	- \$43 47	5.99
Average product per employee.....	932 64	970 49	- 12 15	1.24
Average yearly earnings	316 76	321 63	+ 4 87	1.54

TABLE V—RANGE OF EMPLOYMENT AND OF UNEMPLOYMENT.

Months.	Total no. of persons employed in		Percentages of			
			Employment in		Unemployment in	
	1904.	1905.	'1904.	1905.	1904.	1905.
January	154	162	85.56	84.38	14.44	15.62
February	153	161	85.00	83.86	15.00	16.14
March	157	170	87.22	83.54	12.78	11.46
April	159	179	88.33	93.23	11.67	6.77
May	170	182	94.45	94.79	5.55	5.21
June	172	183	95.56	94.79	4.44	5.21
July	162	171	90.00	89.06	10.00	10.94
August	164	172	91.11	89.58	8.89	10.42
September	172	183	95.56	94.79	4.44	5.21
October	180	192	100.—	100.—	0.00	0.00
November	174	184	96.67	95.83	3.33	4.17
December	164	176	91.11	91.67	8.89	8.33
Average	165	176	91.67	91.67	8.33	8.33

TABLE VI—OCCUPATIONS AND WAGES OF EMPLOYEES.

Occupations.	Total no of persons.		Average hours per day.		Average wages per day.		Average wages per hour.		Increase, +, or decrease, —, per day in 1905.	
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	Amt.	Per ct.
	Boys	3	4	10	10	\$.50	\$.58	\$.05	\$.058	+.08	16.00
Cleaners	3	4	10	9.75	2.223	2.27	.222	.233	+.047	9.11
Clerks	5	6	10	10	1.084	1.25	.108	.125	+.166	15.31
Dyers	20	21	9.75	9.76	1.811	1.936	.186	.198	+.125	6.90
Dyers, female	3	1	9.66	9	2.00	2.25	.207	.25	+.25	12.50
Dyers' helpers		6		10		1.721		.172		
Dyers' helpers, female		13		10		.886		.088		
Engineers	2	3	10.5	10	2.42	2.613	.234	.261	+.193	7.97
Finishers, female	18	27	10	10	.901	2.805	.09	.208	+.096	10.65
Firemen	1	1	10	10	2.00	2.08	.20	.208	+.08	4
Helpers	7	10	10	10	1.227	1.366	.122	.136	+.139	11.32
Helpers, female	12	12	9.5	9	.48	.586	.05	.059	+.056	11.67
Laborers	5				1.466		.146			
Layers	3	4	10	9.75	2.056	1.917	.205	.196	-.139	6.76
Porters	1	1	10	10	1.75	2.08	.175	.208	+.33	18.86
Pressers	6	14	10	10	1.55	1.32	.155	.132	-.23	14.84
Pressers, female	74	55	9.27	9	.878	.905	.094	.10	+.027	3.07
Seamstresses	3	3	9.33	9	.886	1.00	.095	.111	+.114	12.87
Solicitors	1	1	10	10	2.17	2.67	.217	.267	+.50	23.04
Tailors	2	3	10	10	2.00	1.863	.20	.186	-.137	6.85
Teamsters	6	7	10	9.85	1.606	1.587	.16	.161	-.019	1.18
Total and average	175	196	9.61	9.60	\$1.15	\$1.208	\$.119	\$.125	+.058	5.04

TABLE VII—CLASSIFICATION OF DAILY WAGES.

Classified daily wages, (inclusive).	Total number of persons employed.						Average wages per day.					
	Male.		Female.		Total.		Male.		Female.		Total.	
	1904	1905.	1904.	1905.	1904.	1905	1904.	1905	1904.	1905.	1904.	1905.
\$.33 or less..			3		3					\$.33		\$.33
.42 to .49.			3	4	3	4			\$.42	.42	.42	.42
.50 to .58.	4	4	11	7	15	11	\$.50	\$.58	.50	.534	.50	.551
.67 to .74.				5		5				.67		.67
.75 to .83.	2	1	52	40	54	41	.79	.83	.802	.804	.802	.805
.92 to .99.			1	18	22	18		.92	.92	.92	.92	.92
1.00 to 1.08.	3	10	16	23	19	33	1.00	1.016	1.005	1.00	1.004	1.004
1.09 to 1.16.	3			2	5	2	1.13		2.18	2.18	1.114	1.09
1.17 to 1.24.		5	2	1	2	6		1.17	1.17	1.17	1.17	1.17
1.25 to 1.33.	3	11	3	3	6	14	1.277	1.291	1.33	1.33	1.303	1.299
1.42 to 1.49.	2				2			1.42				1.42
1.50 to 1.58.	13				12	13	1.50	1.512			1.50	1.512
1.59 to 1.66.	5				5			1.60				1.60
1.67 to 1.74.	11	6			11	6	1.67	1.67			1.67	1.67
1.75 to 1.83.	3	2			3	2	1.803	1.83			1.803	1.83
1.84 to 1.91.		5			5			1.89				1.89
2.00 to 2.08.	7	9	3		10	9	2.00	2.027	2.00		2.00	2.027
2.17 to 2.24.	4	3			4	3	2.17	2.17			2.17	2.17
2.25 to 2.33.		6		1		7		2.25		2.25		2.25
2.50 to 2.58.	3	1			3	1	2.50	2.50	2.50			2.50
2.59 to 2.66.		1				1		2.59				2.59
2.67 to 2.74.	1	3			1	3	2.67	2.67			2.67	2.67
3.00 to 3.08.	1	2			1	2	3.00	3.00			3.00	3.00
3.25 to 3.33.	1	2			1	2	3.33	3.33			3.33	3.33
Total and average	65	85	110	111	175	196	\$1.625	\$1.659	\$.969	\$.853	\$1.15	\$1.208

Remarks.—This industry shows a moderate gain for 1905. There was an increase of 7 per cent. in the average number of persons employed, of about 5 per cent. in the total wages and salaries paid, and 5 per cent. in the value of the output. A large proportion—from 68 to 70 per cent.—of the industry product was paid in wages each year. Employment was somewhat irregular from month to month. The number of female employees exceeded the number of men employed each year, but the latter showed a much larger increase for 1905. Women were employed in many of the more important occupations. Their average daily wages were slightly lower in 1905,—about 2 per cent. Their hours of labor also decreased, but to a less extent than the daily wages.

21. ELECTRIC AND GAS SUPPLIES—10 ESTABLISHMENTS.

TABLE I—MANAGEMENT AND OPERATION.

Classification.	Number in		Increase, +, or decrease, —, in 1905	
	1904.	1905.	Amount.	Per cent
Number of private firms.....	6	6		
Number of male partners.....	7	7		
Number of female partners.....	2	2		
Total number of partners.....	9	9		
Total number of corporations.....	4	4		
Number of male stockholders.....	57	56	— 1	
Number of female stockholders.....				
Total number of stockholders.....	57	56	— 1	1.75
Total number of partners and stockholders.....	60	65	— 1	1.52
Smallest number of persons employed.....	331	323	— 8	2.42
Greatest number of persons employed.....	363	395	+ 32	8.82
Average number of persons employed.....	343	356	+ 13	3.79
Average days in operation.....	300	303	+ 3	1.00

TABLE II—INVESTMENT.

Classification.	Capital invested in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Land.....	\$35,000 00	\$45,900 00	+ \$10,900 00	31.14
Buildings and fixtures.....	124,577 52	129,320 22	+ 4,742 70	3.81
Machinery, etc.....	201,044 41	204,939 71	+ 3,895 30	1.94
Cash and other capital.....	567,269 62	660,323 27	+ 93,053 65	16.40
Total.....	\$927,891 55	\$1,040,483 20	+ \$112,591 65	12.13

TABLE III A—VALUE OF MATERIALS AND LABOR EMPLOYED, AND OF PRODUCT.

Classification.	Value of material used, wages and salaries paid in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Raw material used.....	\$444,276 67	\$511,721 58	+ \$67,444 91	15.18
Other material used.....	50,684 64	61,599 95	+ 10,915 31	21.53
Wages.....	180,485 46	187,513 08	+ 7,027 62	3.89
Salaries.....	126,909 21	143,209 48	+ 16,300 27	12.84
Profit and minor expenses.....	147,566 85	157,442 09	+ 9,875 24	6.69
Goods made and work done..	949,922 83	1,061,483 18	+ 111,563 35	11.74

TABLE III B—ANALYSIS OF TABLE III A.

Classification.	1904.	1905.
Goods made and work done (gross product).....	\$949,922 83	\$1,061,486 18
Value of stock used and and material consumed in production	494,961 31	573,321 53
Industry product (gross production less value of stock and material)	454,961 52	488,164 65
Wages and salaries (Labor's direct share of product	307,394 67	330,722 56
Profit and minor expense fund (industry product less wages)	147,566 85	157,442 09
Percentage of industry product paid in wages	Per cent. 67.56	Per cent. 67.75
Percentage of industry product devoted to profit and minor expenses	32.44	32.25

TABLE IV—AVERAGE CAPITAL, ETC., PER EMPLOYEE.

Classification.	Average capital, product and yearly Earnings in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent.
Average capital per employee	\$2,705 22	\$2,922 71	+ \$217 49	8.04
Average product per employee	2,769 45	2,981 70	+ 212 25	7.66
Average yearly earnings	526 20	526 72	+ 0.52	0.10

TABLE V—RANGE OF EMPLOYMENT AND OF UNEMPLOYMENT.

Months.	Total no. of persons employed in		Percentages of			
			Employment in		Unemployment in	
	1904.	1905.	1904.	1905.	1904.	1905.
January	343	334	94.49	84.56	5.51	15.44
February	331	340	91.18	89.08	8.82	13.92
March	343	341	94.49	86.33	5.51	13.67
April	339	336	93.39	85.06	6.61	14.94
May	363	323	100.—	81.77	.....	18.23
June	359	353	98.90	89.37	1.10	10.63
July	346	376	95.32	95.19	4.68	4.81
August	350	395	96.42	100.—	3.58	.....
September	339	373	93.39	94.43	6.61	5.57
October	335	377	92.28	95.44	7.72	4.56
November	333	364	91.73	92.15	8.27	7.85
December	336	364	92.56	92.15	7.44	7.85
Average	343	356	94.49	90.13	5.51	9.87

TABLE VII—CLASSIFICATION OF DAILY WAGES.

Classified daily wages, (inclusive).	Total number of persons employed.						Average wages per day.					
	Male.		Female.		Total.		Male.		Female.		Total.	
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.
\$.33 and less	1	2			1	2	\$.33	\$.33			\$.33	\$.33
.42 to \$.49	1				1		.42				.42	
.50 to .58	4	4			4	4	.54	.52			.54	.52
.59 to .66		8	16	10	16	13		.60	\$.65	\$.65	.65	.638
.67 to .74	4	2			4	2	.67	.70			.67	.70
.75 to .83	27	27	8	8	35	35	.753	.762	.75	.75	.752	.759
1.00 to 1.08	16	45	4	7	20	52	1.00	1.00	1.00	1.00	1.00	1.00
1.09 to 1.16	1			1	1	1	1.15			1.10	1.15	1.10
1.25 to 1.33	10	7	1		11	7	1.25	1.25	1.25		1.25	1.25
1.34 to 1.41	3	3			3	3	1.35	1.40			1.35	1.40
1.50 to 1.58	50	40			50	40	1.50	1.50			1.50	1.50
1.59 to 1.66	4	4			4	4	1.615	1.612			1.615	1.612
1.75 to 1.83	52	41			52	41	1.75	1.75			1.75	1.75
1.84 to 1.91	1	3			1	3	1.85	1.85			1.85	1.85
2.00 to 2.08	48	27			48	27	2.00	2.00			2.00	2.00
2.25 to 2.33	14	15			14	15	2.250	2.25			2.250	2.25
2.50 to 2.58	23	32			23	32	2.50	2.50			2.50	2.50
2.67 to 2.74	1				1		2.67				2.67	
2.75 to 2.83	10	19			10	19	2.76	2.757			2.76	2.757
2.84 to 2.91	4	3			4	3	2.863	2.867			2.863	2.867
3.00 to 3.08	16	17			16	17	3.00	3.00			3.00	3.00
3.25 to 3.33	10	11			10	11	3.25	3.25			3.25	3.25
3.50 to 3.58	9	15			9	15	3.50	3.50			3.50	3.50
3.75 to 3.83		1				1		3.75				3.75
4.00 to 4.08	1	7			1	7	4.00	4.00			4.00	4.00
4.50 to 4.58	1				1		4.50				4.50	
Total and av.	311	328	29	26	340	354	\$1.869	\$1.914	\$.747	\$.792	\$1.773	\$1.832

Remarks.—The manufacture of electric and gas supplies shows a large gain for 1905, as would be expected from the increasing use of electricity and gas throughout the country. There was an increase of 12 per cent. in the total capital invested, every item of investment showing an increase. Especially noticeable is the 31 per cent. gain in the amount invested in land, indicating the establishment of the industry on a more permanent basis. The number of employees increased 4 per cent.; the value of the total wages and salaries paid, 7 per cent.; and the value of the output, 12 per cent. Labor's share of the industry product was large each year—about 68 per cent. Employment was somewhat less regular in 1905. A few women were employed each year, chiefly as winders. These worked uniformly 10 hours per day. Female help received lower wages in this industry than the average daily wages of women for all industries. Men, on the contrary, received slightly higher than the average wages.

22. EXCELSIOR—5 ESTABLISHMENTS.

TABLE I—MANAGEMENT AND OPERATION.

Classification.	Number in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Number of private firms	2	2	.....	.....
Number of male partners	2	2	.....	.....
Number of female partners .....	.....	.....	.....	.....
Total number of partners	2	2	.....	.....
Number of corporations	3	3	.....	.....
Number of male stockholders	11	12	+ 1	9.09
Number of female stockholders	3	2	— 1	33.33
Total number of stockholders	14	14	.....	.....
Total number of partners and stockholders	16	16	.....	.....
Smallest number of persons employed	102	108	+ 6	5.88
Greatest number of persons employed	123	134	+ 11	8.94
Average number of persons employed	111	118	+ 7	6.31
Average days in operation	273	275	+ 2	0.73

TABLE II—INVESTMENT.

Classification.	Capital invested in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Land	\$23,785 00	\$35,558 70	+ \$11,773 70	49.50
Buildings and fixtures	36,760 95	45,871 57	+ 9,170 62	24.99
Machinery, etc.	83,984 85	94,445 00	+ 10,460 65	12.45
Cash and other capital	113,608 59	102,242 41	— 11,366 18	10.00
Total	\$258,078 89	\$278,117 68	+ 20,038 79	7.77

TABLE III A—VALUE OF MATERIALS AND LABOR EMPLOYED, AND OF PRODUCT.

Classification.	Value of material used, wages and salaries paid in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Raw material used	\$130,601 89	\$145,714 15	+ \$15,112 26	11.57
Other material used	7,765 82	7,152 74	— 613 08	7.89
Wages	40,362 61	46,388 34	+ 6,025 73	14.93
Salaries	16,600 00	16,910 00	+ 310 00	1.87
Profit and minor expenses ..	103,622 36	111,017 58	+ 7,395 22	7.14
Goods made and work done ..	298,952 68	327,182 81	+ 28,230 13	9.44

TABLE III B—ANALYSIS OF TABLE III A.

Classification.	1904.	1905.
Goods made and work done (gross product).....	\$298,952 68	\$327,182 81
Value of stock used and material consumed in production	138,367 71	152,866 89
Industry product (gross production less value of stock and material)	160,584 97	174,315 92
Wages and salaries (Labor's direct share of product)	56,962 61	63,298 34
Profit and minor expense fund (industry product less wages)	103,622 36	111,017 58
Percentage of industry product paid in wages	Per cent. 35.47	Per cent. 36.31
Percentage of industry product devoted to profit and minor expenses	64.53	63.69

TABLE IV—AVERAGE CAPITAL, ETC., PER EMPLOYEE.

Classification.	Average capital, product and yearly earnings in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent.
Average capital per employee	\$2,325 04	\$2,356 93	+ \$31 89	1.37
Average product per employee	2,693 27	2,772 74	+ 79 47	2.95
Average yearly earnings	362 63	393 12	+ 30 49	8.41

TABLE V—RANGE OF EMPLOYMENT AND OF UNEMPLOYMENT.

Months.	Total no. of persons employed in		Percentages of			
	1904.	1905.	Employment in		Unemployment in	
			1904.	1905.	1904.	1905.
January	113	108	91.87	80.60	8.13	19.40
February	112	109	91.06	81.35	8.94	18.65
March	106	111	86.18	82.84	13.82	17.16
April	115	119	93.50	88.81	6.50	11.19
May	108	116	83.74	86.57	16.26	13.43
June	102	111	82.93	82.84	17.07	17.16
July	102	112	82.93	83.58	17.07	16.42
August	113	120	91.87	89.55	8.13	10.45
September	123	125	100.—	93.28	.....	6.72
October	119	126	96.75	94.03	3.25	5.97
November	114	134	92.68	100.—	7.32	.....
December	113	130	91.87	97.02	8.13	2.98
Average	111	118	90.24	88.06	9.74	11.94

TABLE VI—OCCUPATIONS AND WAGES OF EMPLOYEES.

Occupations.	Total no. of persons.		Average hours per day.		Average wages per day.		Average wages per hour.		Increase, +, or decrease, —, per day in 1905.	
	1904.	1905.	1904	1905.	1904.	1905.	1904.	1905.	Amt.	Per ct.
Bookkeepers, female	1	8			\$1.20		\$1.15			
Boys	17	10			\$0.912		\$0.901			
Carpenters	1	10			2.00		.20			
Engineers	3	10			2.50		.25			
Filers	1	10			1.75	1.75	.175	.175		
Firemen	1	10			1.60	1.50	.16	.15	—\$.10	6.25
Foremen	7	11	10	10	2.00	1.841	.20	.184	— .159	7.95
Helpers	22	10	10	10	1.166	1.50	.116	.15	+ .334	28.64
Laborers	41	60	10	10	1.357	1.368	.135	.136	+ .011	1.81
Machine tenders	24	10	10	10	1.55	1.57	.155	.157	+ .02	1.29
Machinists	7	9	10	10	2.143	2.22	.214	.222	+ .077	3.59
Millwrights	1	10			1.62		.162			
Sawyers	4	10			1.50		.150			
Sewers, female	65	6	10	10	.65	.65	.065	.065		
Superintendents	1	10			7.00		.70			
Teamsters	2	4	10	10	1.50	2.25	.15	.225	+ .75	50.00
Watchmen	2	3	10	10.66	1.30	1.283	.13	.12	— .017	1.30
Total	176	133	9.98	10.02	\$1.178	\$1.49	\$0.118	\$0.148	+\$0.312	26.48

TABLE VII—CLASSIFICATION OF DAILY WAGES.

Classified daily wages, (inclusive).	Total number of persons employed.						Average wages per day.					
	Male		Female.		Total.		Male.		Female.		Total.	
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904	1905.
\$0.59 to \$0.66		13	65	6	65	6	13	\$0.90	\$0.65	\$0.65	\$0.65	\$0.65
.84 to .91		4				4	4	.95	.95		.95	.95
.92 to .99	9	4			9	4	2	1.00	1.00		1.00	1.00
1.00 to 1.08	7	2			7	2	1			1.20	1.20	1.20
1.17 to 1.24			1		1						1.25	1.25
1.25 to 1.33	6	7			6	7	1	1.25	1.25		1.25	1.25
1.34 to 1.41	34	43			34	43	1	1.352	1.352		1.352	1.352
1.50 to 1.58	20	28			20	28	1	1.50	1.502		1.50	1.502
1.59 to 1.66	9	1			9	1	1	1.602	1.62		1.602	1.62
1.67 to 1.74	3	1			3	1	1	1.70	1.67		1.70	1.67
1.75 to 1.83	7	7			7	7	1	1.771	1.75		1.771	1.75
1.84 to 1.91		3			3	3		1.85			1.85	1.85
2.00 to 2.08	11	10			11	10	2	2.00	2.00		2.00	2.00
2.50 to 2.58	2	2			2	2	2	2.50	2.50		2.50	2.50
2.75 to 2.83	1	1			1	1		2.75			2.75	2.75
3.00 to 3.08	2	4			2	4	3	3.00	3.00		3.00	3.00
7.00 to 7.08		1			1	1		7.00			7.00	7.00
Total	110	127	66	6	176	133	\$1.49	\$1.53	\$0.659	\$0.65	\$1.178	\$1.49

Remarks.—An exceptional gain is exhibited by this industry for 1905. Nearly 50 per cent. more capital was invested in land, about 25 per cent. more in buildings, and 12 per cent. more in machinery, than in the previous year. There was also an increase of 6 per cent. in the average number of employees, of 11 per cent. in the total wages and salaries paid, of 8 per cent. in the average yearly earnings of employees, of 10 per cent. in the value of the material used, and of 9 per cent. in the output. The average daily wages were over 26 per cent. higher in 1905, but were still very low. Only 36 per cent. of the value of the industry product was paid in wages each year. There were 66 female employees in 1904, and but 6 the following year—a remarkable decrease. There is possibly an error in the number reported by one or more establishments. This decrease is chiefly responsible for the apparent increase of 26 per cent. in the average daily wages paid, as the daily wages of men alone show a gain of only 3 per cent. Employment was somewhat irregular each year.

23. FANCY ARTICLES—10 ESTABLISHMENTS.

TABLE I—MANAGEMENT AND OPERATION.

Classification.	Number in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Number of private firms	6	6		
Number of male partners	11	12	+ 1	9.09
Number of female partners				
Total number of partners	11	12	+ 1	9.09
Number of corporations	4	4		
Number of male stockholders	23	30	+ 7	30.44
Number of female stockholders	1	1		
Total number of stockholders	24	31	+ 7	29.17
Total number of partners and stockholders.	35	43	+ 8	22.86
Smallest number of persons employed	436	437	+ 1	0.23
Greatest number of persons employed	456	530	+ 74	16.23
Average number of persons employed	444	462	+ 18	4.05
Average days in operation	309	308	— 1	0.32

TABLE II—INVESTMENT.

Classification.	Capital invested in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent.
Land	\$8,550 00	\$10,098 00	+ \$1,548 00.	18.11
Buildings and fixtures	37,106 86	40,002 00	+ 2,895 14	7.80
Machinery, etc.	78,243 35	100,649 00	+ 22,405 65	28.61
Cash and other capital	185,868 64	200,511 32	+ 14,642 68	7.88
Total	\$309,768 85	\$351,260 32	+ \$41,491 47	13.39

TABLE III A—VALUE OF MATERIALS AND LABOR EMPLOYED, AND OF PRODUCT.

Classification.	Value of material used, wages and salaries paid in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Raw material used	\$249,316 08	\$270,004 66	+ \$20,688 58	8.30
Other material used	30,439 92	31,867 95	+ 1,428 03	4.69
Wages	157,412 15	164,008 06	+ 6,595 91	4.19
Salaries	40,210 94	41,402 26	+ 1,191 32	2.96
Profit and minor expenses ..	111,506 35	114,487 46	+ 2,981 11	2.67
Goods made and work done ..	588,885 44	621,770 39	+ 32,884 95	5.58

TABLE III B—ANALYSIS OF TABLE III A.

Classification.	1904.	1905.
Goods made and work done (gross product).....	\$588,885 44	\$621,770 39
Value of stock used and material consumed in pro- duction	279,756 00	301,872 61
Industry product (gross production less value of stock and material)	309,129 44	319,897 78
Wages and salaries (Labor's direct share of pro- duct)	197,623 09	205,410 32
Profit and minor expense fund (industry product less wages)	111,506 35	114,487 46
Percentage of industry product paid in wages.....	63.93	64.21
Percentage of industry product devoted to profit and minor expenses	36.07	35.79

TABLE IV— AVERAGE CAPITAL, ETC., PER EMPLOYEE.

Classification.	Average capital, product and yearly earnings in		Increase, +, or decrease, --, in 1905.	
	1904.	1905.	Amount.	Per cent.
Average capital per employee	\$697 68	\$760 30	+ \$62 62	8.98
Average product per employee	1,326 32	1,389 11	+ 62 79	4.73
Average yearly earnings	394 52	355 00	+ 0 48	0.14

TABLE V—RANGE OF EMPLOYMENT AND OF UNEMPLOYMENT.

Months.	Total no. of persons employed in		Percentages of			
			Employment in		Unemployment in	
	1904.	1905.	1904.	1905.	1904.	1905.
January	449	450	98.47	84.90	1.53	15.10
February	441	436	96.71	82.26	3.29	17.74
March	438	443	96.05	83.58	3.95	16.42
April	441	451	96.71	85.09	3.29	14.91
May	436	454	95.62	85.66	4.38	14.34
June	442	454	96.93	85.63	3.07	14.34
July	438	440	96.05	83.02	3.95	16.98
August	447	437	98.03	82.45	1.97	17.55
September	445	444	97.59	83.77	2.41	16.23
October	444	489	97.37	92.26	2.63	7.74
November	454	519	99.56	97.92	0.44	2.08
December	456	530	100.—	100.—	.....	.....
Average	444	462	97.37	87.17	2.63	12.83

TABLE VI—OCCUPATIONS AND WAGES OF EMPLOYEES.

Occupations.	Total no of persons.		Average hours per day.		Average wages ¹ per day.		Average wages per hour.		Increase, +, or decrease, —, per day in 1905.		
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905	Amt.	Per ct.	
Apprentices	4	1	9.75	9	\$.623	\$.75	\$.064	\$.083	+	\$.127	2.04
Bench hands	2		10		2.00		.20				
Bench hands, female	43		10		.620		.062				
Buffers	11	14	10	10	1.977	2.25	.198	.225	+	.277	14.00
Cabinet makers	1		8		2.20		.275				
Carpenters	4	2	8.50	9	2.50	1.90	.294	.211	—	.600	24.00
Carvers	4	1	8	8	2.965	2.60	.371	.325	—	.365	12.31
Comb sawers	1		10		1.620		.162				
Cutters	3	2	10	10	1.583	1.25	.158	.125	—	.333	21.05
Decorators	3	15	8	8	2.733	2.771	.342	.346	+	.038	1.39
Die sinkers	2		10		2.00		.20				
Engineers	2	2	11	10	2.00	2.167	1.82	.217	+	.167	8.35
Engravers	3	6	10	10	2.417	2.208	.242	.221	—	.209	8.65
Firemen	1	1	10	10	1.80	1.80	.18	.18			
Foremen		2		10		3.00		.30			
Foundry men	1		10		2.50		.25				
Helpers	11	16	9.64	9.13	.788	.979	.082	.107	+	.191	24.24
Helpers, female		52		10		.622		.062			
Jewelers	8	12	9.63	9	1.906	1.939	.198	.215	+	.033	1.73
Laborers	32	11	10	9.27	2.234	1.706	.223	.184	—	.528	23.63
Laborers, female		6		10		.583		.058			
Lathers	11	3	8	8	2.636	3.00	.330	.375	+	.364	13.81
Machine tenders	25	99	10	10	1.274	1.40	.127	.14	+	.126	9.89
Machine tenders, female	35	1	10	10	.60	1.50	.06	.15	+	.900	150.00
Machinists	16	12	9.88	9.04	2.619	2.41	.265	.237	—	.209	7.98
Mold makers		1		8		2.50		.313			
Packers	2		10		1.585		.159				
Packers, female	2	1	10	10	.75	.75	.075	.075			
Plasterers	11		8		4.00		.50				
Plaster molders		12		8		3.192		.399			
Polishers		2		9		1.34		.150			
Pressmen	34		10		1.454		.145				
Printers	3	2	10	10	2.14	2.50	.214	.25	+	.36	16.82
Printers' helpers	1		10		1.10		.110				
Purse makers	91	94	10	10	1.345	1.389	.139	.139	+	.044	3.27
Purse makers, female	67	81	10	10	.782	.842	.078	.084	+	.060	7.67
Riveters	2		10		2.00		.20				
Riveters, female		4		10		.75		.075			
Satin finishers, female	5	34	10	10	.60	.609	.06	.061	+	.009	1.50
Sewers, female	6	7	10	10	.917	.821	.092	.082	—	.096	1.05
Shipping clerks	1	4	10	10	2.00	1.668	.20	.167	—	.332	16.60
Spinners	3		10		2.25		.225				
Stucco workers	6		8		2.00		.25				
Stucco workers' helpers	1		8		1.00		.125				
Watchmen		1		10		1.25		.125			
Total and av.	456	504	9.81	9.79	\$1.41	\$1.326	\$.144	\$.135	—	\$.084	5.96

TABLE VII—CLASSIFICATION OF DAILY WAGES.

Classified daily wages, (inclusive).	Total number of persons employed.						Average wages per day.					
	Male.		Female.		Total.		Male.		Female.		Total.	
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.
\$.33 and less	1	.....	.....	.....	1	.....	\$.33	.....	.....	.....	\$.33	.....
.50 to \$.58	12	11	31	36	43	47	\$.50	\$.50	\$.50	\$.504	.50	\$.503
.59 to .66	.....	21	62	55	62	76	.....	.648	.606	.605	.606	.617
.67 to .74	4	10	25	25	29	35	.....	.67	.681	.681	.679	.678
.75 to .83	17	9	13	14	30	23	.....	.778	.777	.805	.75	.79
.84 to .91	.....	6	.....	16	.....	22	.....	.84	.....	.84	.....	.84
1.00 to 1.08	15	19	19	30	34	49	1.00	1.00	1.00	1.00	1.00	1.00
1.09 to 1.16	1	2	.....	.....	1	2	1.10	1.11	.....	.....	1.10	1.11
1.17 to 1.24	9	9	4	5	13	14	1.17	1.17	1.17	1.17	1.17	1.17
1.25 to 1.33	49	26	2	2	51	28	1.276	1.278	1.33	1.33	1.278	1.281
1.34 to 1.41	4	9	.....	.....	4	9	1.37	1.359	.....	.....	1.37	1.359
1.50 to 1.58	24	44	1	2	25	46	1.50	1.50	1.50	1.50	1.50	1.50
1.59 to 1.66	8	9	.....	.....	8	9	1.615	1.613	.....	.....	1.615	1.613
1.67 to 1.74	12	16	1	.....	13	16	1.67	1.67	1.67	.....	1.67	1.67
1.75 to 1.83	11	9	.....	1	11	10	1.759	1.761	.....	1.80	1.759	1.765
1.84 to 1.91	3	6	.....	.....	3	6	1.863	1.877	.....	.....	1.866	1.877
2.00 to 2.08	33	28	.....	.....	33	28	2.00	2.00	.....	.....	2.00	2.00
2.17 to 2.24	6	8	.....	.....	6	8	2.20	2.181	.....	.....	2.20	2.181
2.25 to 2.33	38	16	.....	.....	38	16	2.256	2.25	.....	.....	2.256	2.25
2.34 to 2.41	3	5	.....	.....	3	5	2.40	2.40	.....	.....	2.40	2.40
2.50 to 2.58	5	14	.....	.....	5	14	2.50	2.50	.....	.....	2.50	2.50
2.59 to 2.66	2	6	.....	.....	2	6	2.60	2.608	.....	.....	2.60	2.608
2.67 to 2.74	2	2	.....	.....	2	2	2.67	2.68	.....	.....	2.67	2.68
2.75 to 2.83	14	10	.....	.....	14	10	2.764	2.806	.....	.....	2.764	2.803
2.84 to 2.91	.....	1	.....	.....	.....	1	.....	2.89	.....	.....	.....	2.89
3.00 to 3.08	10	11	.....	.....	10	11	3.00	3.00	.....	.....	3.00	3.00
3.25 to 3.33	2	1	.....	.....	2	1	3.29	3.25	.....	.....	3.29	3.25
3.50 to 3.58	1	3	.....	.....	1	3	3.50	3.50	.....	.....	3.50	3.50
4.00 to 4.08	11	7	.....	.....	11	7	4.00	4.00	.....	.....	4.00	4.00
4.09 to 4.16	1	.....	.....	.....	1	.....	4.16	4.16	.....	.....	4.16	4.16
Total and av.	298	318	158	186	456	504	\$1.738	\$1.675	\$.697	\$.730	\$1.41	\$1.326

Remarks.—The tables show a very satisfactory growth of this industry during the two years considered. There was an increase of from 4 per cent. to 29 per cent. in the capital invested in land, buildings and machinery; in the average number of persons employed, the material used, the total wages and salaries paid, and the output. Labor's share of the industry product was about 64 per cent. each year—a very fair proportion. Employment was apparently quite irregular in 1905. But the large percentage of unemployment for the first nine months of the year was due to the large increase in the number of employees in October. The additional number were retained through the remainder of the year. The apparent irregularity of employment indicates therefore only the natural change incident to the growth of the industry. Female help was employed in some of

the accessory occupations, but also in several of the more important. There was a larger increase in the number of female employees than in the number of male. There was a slight increase in the average daily wages of women. All female help worked ten hours per day each year, whereas the male employees averaged less than $9\frac{4}{5}$ hours.

24. FLOUR AND FEED—62 ESTABLISHMENTS.

TABLE I—MANAGEMENT AND OPERATION.

Classification.	Number in		Increase, +, or decrease, —, in 1905.	
	1904	1905	Amount.	Per cent.
Number of private firms	37	38	+ 1	2.70
Number of female partners	5	4	— 1	20.00
Number of male partners	55	57	+ 2	3.64
Total number of partners	60	61	+ 1	1.67
Number of corporations	25	24	— 1	4.00
Number of male stockholders	135	137	+ 2	1.48
Number of female stockholders	27	23	— 4	14.81
Total number of stockholders	162	160	— 2	1.23
Total number of partners and stockholders.	222	221	— 1	0.45
Smallest number of persons employed	625	609	— 16	2.56
Greatest number of persons employed	707	757	+ 50	7.07
Average number of persons employed	663	663	— 3	0.45
Average days in operation	312	313	+ 1	0.32

TABLE II—INVESTMENT.

Classification,	Capital invested in		Increase, +, or decrease, —, in 1905	
	1904.	1905.	Amount.	Per cent.
Land	\$564,780 13	\$454,910 65	— \$109,869 48	19.45
Buildings and fixtures	1,045,347 83	959,867 64	— 85,480 19	8.18
Machinery, etc.	1,465,907 62	1,173,671 76	— 292,235 86	19.94
Cash and other capital	2,419,068 20	2,194,741 98	— 224,326 22	9.27
Total	\$5,495,103 78	\$4,783,192 03	— \$711,911 75	12.96

TABLE III A—VALUE OF MATERIALS AND LABOR EMPLOYED, AND OF PRODUCT.

Classification.	Value of material used wages and salaries paid in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Raw material used	\$12,868,333 78	\$12,454,450 34	— \$413,883 44	3.22
Other material used	653,956 47	622,324 94	— 31,631 53	4.84
Wages	396,284 80	395,203 21	— 1,076 59	0.27
Salaries	182,444 73	176,304 00	— 6,140 73	3.37
Profit and minor expenses ..	1,008,031 54	1,000,444 89	— 7,586 65	0.75
Goods made and work done ..	15,109,051 32	14,648,732 38	— 460,318 94	3.05

TABLE III B—ANALYSIS OF TABLE III A.

Classification.	1904.	1905.
Value of goods made and work done (gross product)	\$15,109 051 32	\$14,648,732 38
Value of stock used and material consumed in production	13,522,290 25	13,076,774 28
Industry product (gross production less value of stock and material)	1,586,761 07	1,571,957 10
Wages and salaries (Labor's direct share of product)	578,729 53	571,512 21
Profit and minor expense fund (industry product less wages)	1,008,031 54	1,000,444 89
	Per cent.	Per cent.
Percentage of industry product paid in wages.....	36.47	36.33
Percentage of industry product devoted to profit and minor expenses	63.53	63.64

TABLE IV—AVERAGE CAPITAL, ETC., PER EMPLOYEE.

Classification.	Average capital, product and yearly earnings in		Increase, +, or de- crease, —, in 1905.	
	1904.	1905.	Amount.	Per cent.
Average capital per employee	\$8,401 06	\$7,214 47	—\$1,186 59	14.12
Average product per employee	22,637 76	22,094 62	— 543 14	2.61
Average yearly earnings	595 02	596 09	+ 1 07	0.18

TABLE V—RANGE OF EMPLOYMENT AND OF UNEMPLOYMENT.

Months.	Total no. of persons employed in		Percentages of			
			Employment in		Unemployment in	
	1904.	1905.	1904.	1905.	1904.	1905.
January	685	644	96.89	85.07	3.11	14.93
February	672	626	95.05	82.69	4.95	17.31
March	707	650	100.—	85.88	.....	14.14
April	660	633	93.35	83.62	6.65	16.38
May	671	631	94.91	83.35	5.09	16.65
June	670	617	94.77	81.51	5.23	18.49
July	636	609	89.96	80.45	10.04	19.55
August	625	639	89.40	84.41	11.60	15.59
September	651	732	92.08	96.70	7.92	3.30
October	685	757	96.89	100.—	3.11	.....
November	679	717	96.04	94.72	3.96	5.28
December	655	695	92.64	91.81	7.36	8.19
Average	663	663	94.20	87.58	5.80	12.42

TABLE VI—OCCUPATIONS AND WAGES OF EMPLOYEES.

Occupations.	Total no. of persons.		Average hours per day		Average wages per day.		Average wages per hour.		Increase, +, or decrease, - per day in 1905.	
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	Amt. Per ct.	
									Amt.	Per ct.
Bagmen	1	1	10	10	\$1.75	\$2.00	\$.175	\$.20	+	\$.25 14.28
Bolters	3	4	10.66	11	2.667	2.75	.25	.25	+	.033 3.11
Bookkeepers	1	1	.....	11	.....	1.00	.....	.091	.....	.....
Bookkeepers, female.	3	2	10	10	1.39	.50	.139	.05	-	.89 64.03
Branders	1	1	12	12	2.25	2.25	.187	.187	.....	.....
Carpenters	3	4	10	10	2.75	3.00	.275	.30	+	.25 9.09
Cleaners	3	4	8	8	1.30	1.35	.162	.168	+	.05 3.81
Coal passers	6	8	10	9.25	1.75	1.656	.175	.179	-	.094 5.37
Coopers	2	.....	10	.....	2.00	.....	.20	.....	.....	.....
Elevator men	2	1	10	10	1.90	2.30	.19	.23	+	.40 21.05
Engineers	20	23	10.30	10	2.233	2.22	.216	.222	-	.013 .58
Firemen	12	11	10.33	9.36	1.869	1.915	.18	.204	+	.046 2.46
Foremen	10	17	10	10	2.209	2.225	.22	.222	+	.016 .72
Grain buyers	1	2	10	10	1.55	1.796	.155	.179	+	.246 15.83
Grinders	11	13	10.09	10.83	2.376	2.014	.235	.194	-	.362 15.23
Helpers	131	127	10.10	10.09	1.57	1.56	.155	.154	-	.01 .637
Labors	158	120	9.82	9.91	1.594	1.593	.162	.16	-	.01 .627
Loaders	8	8	9.25	10	1.431	1.535	.153	.157	+	.144 10.06
Machinists	1	.....	10	.....	3.50	.....	.35	.....	.....	.....
Machine tenders	20	19	11.20	11.20	2.086	2.136	.187	.189	+	.04 1.91
Millers	81	89	10.21	9.87	2.271	2.244	.222	.227	-	.027 1.19
Millhands	6	4	10	10	1.696	1.69	.169	.169	-	.006 .35
Millwrights	6	8	10	10	2.375	2.631	.237	.263	+	.244 8.48
Nailers	34	20	10.35	11.70	1.91	2.079	.194	.177	+	.169 8.85
Oilers	24	22	9.83	9.82	1.71	1.747	.174	.177	+	.037 2.16
Packers	89	91	10.40	9.95	1.914	1.915	.194	.199	+	.001 .052
Purifier tenders	7	6	11.71	10.66	2.141	2.081	.192	.195	-	.06 2.80
Roller tenders	3	2	10.66	10	2.167	2.50	.203	.25	+	.333 15.32
Shippers	2	3	10	10	2.125	2.50	.212	.25	+	.375 17.64
Smutters	1	1	10	10	2.50	2.50	.25	.25	.....	.....
Storekeepers .....	.....	1	.....	10	.....	1.50	.....	.15	.....	.....
Sweepers	16	16	10.25	9.68	1.58	1.482	.154	.153	-	.093 6.20
Teamsters	18	24	10.23	10.08	1.614	1.636	.162	.162	+	.022 1.36
Truckers	9	5	10	10	1.519	1.50	.151	.15	-	.019 1.24
Warehouse men	17	19	10	10	1.764	1.763	.176	.176	-	.001 .056
Watchmen	10	8	12	10.75	1.794	1.616	.149	.15	-	.178 9.92
Weighers .....	.....	1	.....	10	.....	1.50	.....	.15	.....	.....
Total	719	687	10.16	10.07	\$1.822	\$1.841	\$.176	\$.183	+	\$.039 2.16

TABLE VII—CLASSIFICATION OF DAILY WAGES.

Classified daily wages, (inclusive).	Total number of persons employed.						Average wages per day.					
	Male.		Female.		Total.		Male.		Female.		Total.	
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.
\$0.50 to \$0.58.	1	.....	1	2	2	2	\$0.50	.....	\$0.50	\$0.50	\$0.50	\$0.50
.75 to .83.	5	6	.....	.....	5	6	.766	.....	.766	.766	.766	.75
.84 to .91.	3	1	.....	.....	3	1	.87	.....	.87	.87	.87	.85
1.00 to 1.08.	9	8	.....	.....	9	8	1.00	1.00	.....	1.00	1.00	1.00
1.09 to 1.16.	3	1	.....	.....	3	1	1.143	1.14	.....	1.143	1.14	1.14
1.25 to 1.33.	29	37	.....	.....	29	37	1.26	1.26	.....	1.26	1.26	1.23
1.34 to 1.41.	20	21	.....	.....	20	21	1.358	1.356	.....	1.358	1.353	1.353
1.42 to 1.49.	8	5	.....	.....	8	5	1.43	1.446	.....	1.43	1.446	1.440
1.50 to 1.58.	170	151	.....	.....	170	151	1.501	1.502	.....	1.501	1.502	1.502
1.59 to 1.66.	38	21	.....	.....	38	21	1.635	1.633	.....	1.635	1.633	1.633
1.67 to 1.74.	71	57	1	.....	72	57	1.693	1.689	1.67	.....	1.693	1.689
1.75 to 1.83.	95	118	.....	.....	95	118	1.761	1.759	.....	1.761	1.759	1.759
1.84 to 1.91.	11	8	.....	.....	11	8	1.885	1.882	.....	1.885	1.882	1.882
1.92 to 1.99.	7	11	.....	.....	7	11	1.92	1.923	.....	1.92	1.923	1.923
2.00 to 2.08.	113	98	1	.....	113	98	2.00	2.00	2.00	.....	2.00	2.00
2.09 to 2.16.	10	6	.....	.....	10	6	2.115	2.12	.....	2.115	2.12	2.12
2.17 to 2.24.	1	1	.....	.....	1	1	2.20	2.20	.....	2.20	2.20	2.20
2.25 to 2.33.	43	50	.....	.....	43	50	2.259	2.264	.....	2.250	2.264	2.264
2.34 to 2.41.	.....	1	.....	.....	.....	1	.....	2.40	.....	.....	.....	2.40
2.50 to 2.58.	32	36	.....	.....	32	36	2.50	2.50	.....	2.50	2.50	2.50
2.59 to 2.66.	3	2	.....	.....	3	2	2.61	2.61	.....	2.61	2.61	2.61
2.67 to 2.74.	2	1	.....	.....	2	1	2.685	2.67	.....	2.685	2.67	2.67
2.75 to 2.83.	19	22	.....	.....	19	22	2.75	2.75	.....	2.75	2.75	2.75
2.84 to 2.91.	1	.....	.....	.....	1	.....	2.90	.....	.....	2.90	.....	.....
3.00 to 3.08.	14	11	.....	.....	14	11	3.00	3.00	.....	3.00	3.00	3.00
3.17 to 3.24.	1	.....	.....	.....	1	.....	3.17	.....	.....	3.17	.....	.....
3.25 to 3.33.	1	2	.....	.....	1	2	3.27	3.26	.....	3.27	3.26	3.26
3.50 to 3.58.	3	6	.....	.....	3	6	3.50	3.50	.....	3.50	3.50	3.50
3.84 to 3.91.	1	2	.....	.....	1	2	3.85	3.89	.....	3.85	3.86	3.86
4.09 to 4.16.	.....	1	.....	.....	.....	1	.....	4.16	.....	.....	.....	4.16
4.17 to 4.24.	1	.....	.....	.....	1	.....	4.17	.....	.....	4.17	.....	.....
4.50 to 4.58.	1	.....	.....	.....	1	.....	4.50	.....	.....	4.50	.....	.....
8.00 to 8.08.	1	.....	.....	.....	1	.....	8.00	.....	.....	8.00	.....	.....
8.25 to 8.33.	.....	1	.....	.....	.....	1	.....	8.25	.....	.....	.....	8.25
Total ..	716	685	3	2	719	687	\$1.824	\$1.844	\$1.39	\$1.50	\$1.808	\$1.84

Remarks.—The fact that returns were received from less than 10 per cent. of the firms engaged in this industry renders doubtful the value of the data presented in the foregoing tables. In 1900 the United States census reported 717 flour and grist mills in Wisconsin, with a total output valued at \$26,327,942. There was an increase of over \$2,000,000 in the value of the product in the decade from 1890 to 1900. In the latter year Wisconsin ranked eighth among the states in the production of flour. The increased utilization of the abundant water power of the state by all branches of manufacturing, the opening of thousands of acres in the northern part of the state to agriculture and stock-raising, and the increased transportation facilities resulting from

the building of new railroad lines, all make it improbable that this industry suffered such a loss for 1905 as is apparently indicated by the figures presented in the tables, based upon reports from only 62 establishments. As far however as these 62 firms were concerned there was a decrease of 13 per cent. in the capital invested, and a slight decrease in the average number of employees, the total wages and salaries paid, the material used, and the output. Employment was somewhat irregular, especially in 1905. Women were employed only as bookkeepers. Those women employed in 1905 received much lower wages than those employed in 1904.

25. FOOD PREPARATIONS—22 ESTABLISHMENTS.

TABLE I—MANAGEMENT AND OPERATION.

Classification.	Number in		Increase, +, or decrease, —, in 1905.	
	1904	1905	Amount.	Per cent.
Number of private firms	4	2	— 2	50.00
Number of male partners	8	4	— 4	50.00
Number of female partners				
Total number of partners	8	4	— 4	50.00
Number of corporations	18	20	+ 2	11.11
Number of male stockholders	159	154	— 5	3.14
Number of female stockholders	29	31	+ 2	6.90
Total number of stockholders	188	185	— 3	1.60
Total number of partners and stockholders..	196	189	— 7	3.57
Smallest number of persons employed.....	518	545	+ 27	5.21
Greatest number of persons employed	2,290	2,473	+ 183	7.99
Average number of persons employed	1,038	1,031	— 7	0.67
Average days in operation	151	159	+ 8	5.30

TABLE II—INVESTMENT.

Classification.	Capital invested in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent.
Land	\$184,291 43	\$198,332 20	+ \$14,040 77	7.62
Buildings and fixtures	476,739 01	545,029 30	+ 68,290 29	1.43
Machinery, etc.....	464,215 68	469,654 86	+ 5,439 18	1.17
Cash and other capital	1,355,642 50	1,272,628 01	— 83,014 49	6.12
Total	\$2,480,888 62	\$2,485,644 37	+ \$4,755 75	0.19

TABLE III A—VALUE OF MATERIALS AND LABOR EMPLOYED, AND OF PRODUCT.

Classification.	Value of material used, wages and salaries paid in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Raw material used	\$1,075,975 99	\$1,119,896 70	+ \$43,920 71	4.08
Other material used	917,891 52	920,836 70	+ 2,945 18	0.32
Wages	391,450 17	412,322 59	+ 20,872 42	5.33
Salaries	171,211 64	184,120 97	+ 12,909 33	7.54
Profit and minor expenses....	1,574,214 22	1,681,418 23	+ 107,204 01	6.81
Goods made and work done..	\$4,130,743 54	\$4,318,595 19	+ \$187,851 65	4.55

TABLE III B—ANALYSIS OF TABLE III A.

Classification.	1904.	1905.
Value of goods made and work done (gross product)	\$4,130,743 54	\$4,318,595 19
Value of stock used and material consumed in production	1,993,867 51	2,040,733 40
Industry product (gross production less value of stock and material)	2,133,876 03	2,277,861 79
Wages and salaries (Labor's direct share of product)	562,661 81	566,443 56
Profit and minor expense fund (industry product less wages)	1,574,214 22	1,681,418 23
Percentage of industry product paid in wages.....	Per cent. 26.33	Per cent. 26.18
Percentage of industry product devoted to profit and minor expenses	73.67	73.82

TABLE IV—AVERAGE CAPITAL, ETC., PER EMPLOYEE.

Classification.	Average capital, product and yearly earnings in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent.
Average capital per employee.....	\$2,390 07	\$2,410 91	+ \$20 84	0.87
Average product per employee.....	3,979 52	4,138 74	+ 209 22	5.26
Average yearly earnings	377 12	399 92	+ 22 80	6.05

TABLE V—RANGE OF EMPLOYMENT AND OF UNEMPLOYMENT.

Months.	Total no. of persons employed in		Percentages of			
			Employment in		Unemployment in	
	1904.	1905.	1904.	1905.	1904.	1905.
January	518	576	22.62	23.29	77.38	76.71
February	519	545	22.66	22.04	77.34	77.96
March	567	582	24.76	23.51	75.24	76.49
April	677	702	29.57	28.38	70.43	71.62
May	709	735	30.96	29.72	69.04	70.28
June	1,027	826	44.85	33.40	55.15	66.60
July	2,290	2,473	100.—	100.—	0.00	0.00
August	2,258	2,163	98.60	87.47	1.40	12.53
September	1,430	1,273	62.45	51.43	37.55	48.52
October	1,066	955	46.55	33.62	53.45	61.33
November	750	811	32.75	32.79	67.25	67.21
December	647	725	28.25	29.32	71.75	70.68
Average	1,038	1,031	45.33	41.69	54.67	58.31

TABLE VI—OCCUPATIONS AND WAGES OF EMPLOYEES.

Occupations.	Total no. of persons.		Average hours per day.		Average wages per day.		Average wages per hour.		Increase, +, or decrease, —, per day in 1905.		
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	Amt. Per ct.		
Bakers	1	1	10	10	\$1.50	\$1.70	\$.15	\$.17	+	\$.20	13.33
Blacksmiths	3	1	10	10	2.00	2.00	.20	.20			
Bookkeepers	2		10		2.00		.20				
Boys	13	83	10	10	.861	.848	.086	.085	—	.013	1.51
Carpenters	2	3	9.75	10	2.50	2.00	.256	.20	—	.50	20.00
Engineers	11	7	10.91	10.71	2.164	2.376	.198	.222	+	.212	9.30
Firemen	5	5	12.10	11.20	1.712	1.78	.141	.159	+	.068	3.97
Foremen	15	11	9.90	10.36	2.472	2.415	.25	.232	—	.067	2.31
Helpers	143	68	10.59	9.90	1.381	1.406	.13	.142	+	.025	1.81
Helpers, female	35	79	10	9.91	1.023	.889	.102	.09	—	.134	13.10
Inspectors, female	7	6	10	10	1.036	1.125	.104	.113	+	.089	8.59
Labors	1,106	1,224	10.03	10.20	1.529	1.535	.152	.15	—	.006	.39
Labors, female	401	391	10.18	10.19	.912	.935	.099	.092	—	.023	2.52
Machine tenders	36	74	11.50	11.16	1.778	1.677	.155	.15	—	.101	5.63
Machine tenders, female	13	14	12.50	10.21	.933	1.064	.075	.104	+	.131	14.04
Machinists	45	35	10	10	2.21	2.143	.221	.214	—	.067	3.03
Millwrights	1	5	10	10	2.25	2.05	.225	.205	—	.20	8.89
Packers	3	9	10	10	.75	1.023	.075	.103	+	.273	37.07
Pickers		25	10	10		.50		.05			
Pickers, female	62	343	9.84	11.53	.711	.749	.073	.065	—	.033	5.34
Processors	4	5	10	10	1.638	1.80	.163	.18	+	.112	6.64
Sealers, female	7	10	6	7.20	1.32	1.436	.22	.199	+	.116	8.79
Sorters, female	20		10		.50		.05				
Stenographers	1		10		2.00		.20				
Teamsters	59	73	10.03	10.14	1.631	1.571	.163	.155	—	.060	3.63
Timekeepers, female	2		10		1.43		.143				
Tinmen	2	16	10.50	10	1.775	2.00	.169	.20	+	.225	12.67
Watchmen	10	7	11.10	11.29	1.67	1.60	.15	.142	—	.17	10.12
Total and average	2,024	2,495	10.21	10.05	1.372	1.296	.134	.129	—	.076	5.54

TABLE VII—CLASSIFICATION OF DAILY WAGES.

Classified daily wages, (inclusive).	Total number of persons employed.						Average wages per day.					
	Male.		Female.		Total.		Male.		Female.		Total.	
	1904.	1905.	1904.	1905.	1904	1905.	1904.	1905	1904.	1905.	1904.	1905.
\$.50 to \$.58.	7	25	20	.....	27	25	\$.50	\$.50	\$.50	.....	\$.50	\$.50
.59 to .66.	7	6	20	18	27	24	.65	.65	.65	\$.65	.65	.65
.67 to .74.	.....	8	35	32	35	40	.....	.70	.70	.70	.70	.70
.75 to .83.	57	81	273	547	330	628	.764	.762	.759	.754	.76	.757
.84 to .91.	.....	.....	23	18	25	18	.....	.....	.901	.902	.901	.902
1.00 to 1.08.	78	72	64	107	142	179	1.00	1.00	1.00	1.00	1.00	1.00
1.09 to 1.16.	2	.....	1	2	3	2	1.10	.....	1.16	1.12	1.12	1.12
1.17 to 1.24.	.....	.....	15	15	15	15	.....	.....	1.17	1.17	1.17	1.17
1.25 to 1.33.	114	96	100	91	214	187	1.266	1.258	1.311	1.318	1.283	1.287
1.34 to 1.41.	21	71	.....	.....	21	71	1.352	1.35	.....	.....	1.352	1.35
1.42 to 1.49.	3	3	.....	8	3	11	1.44	1.44	.....	1.44	1.44	1.425
1.50 to 1.58.	586	741	1	5	587	746	1.50	1.50	1.50	1.50	1.50	1.50
1.59 to 1.66.	71	26	.....	.....	71	26	1.609	1.651	.....	.....	1.609	1.651
1.67 to 1.74.	32	32	.....	.....	32	32	1.67	1.671	.....	.....	1.67	1.671
1.75 to 1.83.	304	303	.....	.....	304	303	1.75	1.75	.....	.....	1.75	1.75
1.84 to 1.91.	48	42	.....	.....	48	42	1.867	1.87	.....	.....	1.867	1.87
1.92 to 1.99.	1	1	.....	.....	1	1	1.95	1.95	.....	.....	1.95	1.95
2.00 to 2.08.	98	119	.....	.....	98	119	2.00	2.00	.....	.....	2.00	2.00
2.25 to 2.33.	4	2	.....	.....	4	2	2.25	2.25	.....	.....	2.25	2.25
2.42 to 2.49.	1	.....	.....	.....	1	.....	.....	.....	.....	.....	2.45	.....
2.50 to 2.58.	27	15	.....	.....	27	15	2.50	2.50	.....	.....	2.50	2.50
2.59 to 2.66.	1	1	.....	.....	1	1	2.63	2.63	.....	.....	2.63	2.63
2.67 to 2.74.	1	.....	.....	.....	1	.....	2.67	.....	.....	.....	2.67	.....
2.75 to 2.83.	3	3	.....	.....	3	1	2.793	2.80	.....	.....	2.793	2.80
3.00 to 3.08.	5	3	.....	.....	5	3	3.00	3.00	.....	.....	3.00	3.00
3.25 to 3.33.	.....	1	.....	.....	.....	1	.....	3.33	.....	.....	.....	3.33
4.00 to 4.08.	1	3	.....	.....	1	3	4.00	4.00	.....	.....	4.00	4.00
Total and average	1,472	1,652	552	843	2,024	2,495	\$1.553	\$1.516	\$.889	\$.866	\$1.372	\$1.296

Remarks.—The manufacture of food preparations in Wisconsin is confined chiefly to the canning, pickling, or preserving of various fruits and vegetables. There are also a few important milk condensing plants in the state. The establishments reporting show an increase for 1905 of from 4 per cent. to 8 per cent. in the capital invested in land, the materials used, the total wages and salaries paid, and the output. Labor's share of the industry product was very small each year—about 26 per cent. From the nature of the industry, a large majority of the workmen were employed only in the summer and the early fall. The average number of days of operation was but 151 in 1904 and 159 in 1905. Female help was employed in the regular occupations to a larger extent than in the merely accessory positions. The number of women employed was nearly 60 per cent. greater in 1905 than in 1904. Their average daily wages were slightly

lower; their hours, on the contrary, somewhat longer. The hours for both men and women averaged over 10 per day, each year. A large number of children were employed in this industry.

26. FURNITURE—40 ESTABLISHMENTS.

TABLE I—MANAGEMENT AND OPERATION.

Classification.	Number in		Increase, +, or decrease, —, in 1905.	
	1904	1905	Amount.	Per cent.
Number of private firms.....	6	6		
Number of male partners.....	11	11		
Number of female partners.....				
Total number of partners.....	11	11		
Number of corporations.....	34	34		
Number of male stockholders.....	365	320	— 46	12.57
Number of female stockholders.....	66	65	— 1	1.52
Total number of stockholders.....	432	385	— 47	10.89
Total number of partners and stockholders.....	443	396	— 47	10.61
Smallest number of persons employed.....	3,209	2,935	— 274	8.54
Greatest number of persons employed.....	3,590	3,578	— 12	0.33
Average number of persons employed.....	3,333	3,347	+ 14	0.42
Average days in operation.....	283	280		

TABLE II—INVESTMENT.

Classification.	Capital invested in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Land.....	\$303,467 57	\$441,245 91	+ \$47,778 34	12.14
Buildings and fixtures.....	773,429 52	821,122 76	+ 47,693 24	6.17
Machinery, etc.....	921,919 39	921,809 79	— 109 60	0.01
Cash and other capital.....	2,632,236 49	2,346,590 09	— 315,646 40	11.86
Total.....	\$4,751,052 97	\$4,530,768 55	— \$220,284 42	4.64

TABLE III A—VALUE OF MATERIALS AND LABOR EMPLOYED, AND OF PRODUCT.

Classification.	Value of material used, wages and salaries paid in.		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Raw material used.....	\$1,970,668 77	\$1,976,235 51	+ \$5,566 74	0.28
Other material used.....	361,993 83	366,614 90	+ 4,621 07	1.28
Wages.....	1,279,052 87	1,295,235 84	+ 16,182 97	1.27
Salaries.....	264,931 67	286,593 60	+ 21,661 93	8.18
Profit and minor expenses.....	898,856 41	900,302 88	+ 1,446 47	0.16
Goods made and work done..	\$4,775,503 55	\$4,824,982 73	+ \$49,479 18	1.04

TABLE III B—ANALYSIS OF TABLE III A.

Classification.	1904.	1905.
Value of goods made and work done (gross product)	\$1,775,503 55	\$1,824,982 73
Value of stock used and material consumed in production	2,332,662 60	2,342,850 41
Industry product (gross production less value of stock and material)	2,442,840 95	2,482,132 32
Wages and salaries (Labor's direct share of product)	1,543,984 54	1,581,829 44
Profit and minor expense fund (industry product less wages)	898,856 41	900,302 88
	Per cent.	Per cent.
Percentage of industry product paid in wages.....	63.20	63.74
Percentage of industry product devoted to profit and minor expenses	36.80	36.26

TABLE IV—AVERAGE CAPITAL, ETC., PER EMPLOYEE.

Classification.	Average capital, product and yearly earnings in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent.
Average capital per employee	\$1,425 46	\$1,353 68	— \$71 78	5.04
Average product per employee	1,432 79	1,441 58	+ 8 79	0.61
Average yearly earnings	383 75	386 98	+ 3 23	0.84

TABLE V—RANGE OF EMPLOYMENT AND OF UNEMPLOYMENT.

Months.	Total no. of persons employed in		Percentages of			
	1904.	1905.	Employment in		Unemployment in	
			1904.	1905.	1904.	1905.
January	3,404	3,146	94.82	87.93	5.18	12.07
February	3,508	3,247	97.72	90.75	2.28	9.25
March	3,590	3,423	100.—	95.67	0.00	4.33
April	3,460	3,453	96.38	96.51	3.62	3.49
May	3,350	3,429	93.32	95.84	6.68	4.16
June	3,248	3,241	90.48	90.59	9.52	9.42
July	3,223	2,935	89.78	82.03	10.22	17.97
August	3,248	3,337	90.48	93.27	9.52	6.73
September	3,209	3,486	89.39	97.43	10.61	2.57
October	3,285	3,578	91.51	100.—	8.49	0.00
November	3,241	3,497	90.28	97.74	9.72	2.26
December	3,230	3,392	89.97	94.80	10.03	5.20
Average	3,333	3,347	92.84	93.55	7.16	6.45

TABLE VI—OCCUPATIONS AND WAGES OF EMPLOYEES.

Occupations.	Total no. of persons.		Average hours per day.		Average wages per day.		Average wages per hour.		Increase, +, or decrease, —, per day in 1905		
	1904.	1905.	1904.	1905.	1904.	1905	1904.	1905.	Amt. Per ct.		
									Amt.	Per ct.	
Apprentices	10	30	10	10	\$.706	\$.818	\$.071	\$.082	+	\$.102	14.45
Assemblers		1		10		1.67		1.67			
Bench hands	14	24	10	10	1.011	1.39	.101	.139	+	.379	37.49
Blacksmiths	3	2	10	10	1.833	1.625	.183	.162	—	.208	11.85
Bookkeepers		1		10		1.25		1.25			
Boys	17	26	10	10	.497	.677	.05	.068	+	.18	36.22
Brushmen		2		10		1.40		1.40			
Cabinetmakers	281	364	10	10	1.956	1.816	.196	.182	—	.140	7.16
Carpenters	196	115	10	10	1.639	1.644	.164	.164	+	.005	.31
Carvers	17	44	10	9.98	2.314	2.154	.231	.213	—	.19	8.21
Casket coverers		1		10		3.75		3.75			
Casket coverers, female	3		10		.833		.083				
Casket makers		1		10		1.75		1.75			
Chair makers	1	3	10	10	3.00	1.333	.30	.133	—	1.667	55.57
Clerks	1	4	10	10	2.00	1.875	.20	.188	—	.125	6.25
Cloth hands	6	6	10	10	2.50	2.618	.25	.262	+	.118	4.72
Couch bottom makers		12		10		2.19		2.18			
Craters	2	2	10	10	1.275	1.375	.128	.138	+	.100	7.27
Cutters	3	2	10	10	2.333	2.25	.233	.225	—	.083	3.56
Cutters, female	1	1	8	9	1.17	1.33	.146	.148	+	.16	13.68
Designers	1		10		2.83		.283				
Dippers		1		10		1.50		1.50			
Elevator men	1	2	10	10	1.00	1.125	.10	.113	+	.125	12.5
Engineers	22	21	10	10	2.286	2.373	.229	.237	+	.087	3.81
Filers	4	2	10	10	2.05	2.00	.205	.20	—	.05	2.44
Fillers	7	5	9.71	10	1.36	1.40	.14	.14	+	.04	2.94
Finishers	453	309	10	10	1.519	1.579	.152	.158	+	.06	3.95
Finishers, female	14	12	9.86	10	.861	.804	.087	.080	—	.057	.63
Firemen	23	14	10	10	1.657	1.877	.166	.188	+	.22	13.28
Fitters	3	2	10	10	2.00	2.50	.20	.25	+	.50	25.00
Foremen	27	32	10	10	2.552	2.769	.255	.277	+	.217	8.50
Forewomen		1		10		2.00		2.00			
Gluers	16	25	10	10	1.438	1.408	.144	.141	—	.03	2.09
Helpers	449	513	10	10	1.033	1.107	.103	.111	+	.074	7.16
Helpers, female	28	53	10	9.98	.918	.785	.092	.079	—	.133	14.49
Laborers	647	369	10	10	1.265	1.303	.127	.130	+	.038	3.00
Lining makers, female	3		10		.943		.094				
Lumber inspectors	1		10		2.00		.20				
Lumber pilers	2	1	10	10	1.50	1.50	.15	.15			
Machine tenders	864	893	10	10	1.50	1.536	.15	.154	+	.036	2.40
Machine tenders, female	8	8	10	10	1.50	1.50	.15	.15			
Machinists	45	25	10	10	2.106	2.055	.211	.205	—	.051	2.42
Mattress fillers	4	2	10	9	1.76	1.45	.176	.161	—	.31	17.61
Mattress finishers		5		9		2.25		.25			
Mattress, makers	9	6	9.44	10	2.178	1.962	.217	.196	—	.216	9.92
Mattress makers, female	9	4	10	10	.483	.813	.048	.813	+	.33	68.32
Mattress tufters	1		10		2.00		.20				
Mattress tufters, female	1		10		1.17		.117				
Millwrights	1		10		2.70		.27				
Oilers		1		10		1.35		1.35			
Packers	62	106	10	10	1.383	1.371	.138	.137	—	.012	.87
Painters	14	35	10	10	1.55	1.419	.155	.142	—	.131	8.45
Planers		1		10		1.15		1.15			
Polishers	6	11	10	10	2.10	1.947	.21	.195	—	.153	7.29
Reed workers	9	7	10	10	1.722	1.797	.172	.18	+	.075	4.36
Riveters	8	6	10	10	1.563	1.62	.156	.163	+	.062	3.97
Sandpaperers	4	19	10	10	.80	1.31	.08	.131	+	.51	60.36
Sawyers	1	7	10	10	2.00	1.62	.20	.162	—	.471	23.55
Scalers	2	4	10	10	1.74	1.78	.174	.178	+	.043	2.48
Sewers, female	31	29	9.42	9.79	.974	.96	.103	.098	—	.012	1.23
Shapers	1	2	10	10	1.75	1.75	.175	.175			
Shipping clerks	29	24	9.97	9.98	1.534	1.857	.154	.186	+	.323	21.00

TABLE VI—OCCUPATIONS AND WAGES OF EMPLOYEES—Continued.

Occupations.	Total No. of persons.		Average hours per day.		Average wages per day.		Average wages per hour.		Increase, +, or decrease, —, per day in 1905		
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	Amt.	Per ct.	
Spring makers	34	24	10	10	1.514	1.394	.151	.139	—	.120	7.93
Tackers	5	4	10	10	1.75	2.00	.175	.20	+	.25	14.29
Teamsters	20	29	9.95	9.97	1.512	1.666	.152	.167	+	.154	10.19
Tinners	1	1	10	10	1.75	1.75	.175	.175	.....	.....	.....
Trimmers	5	4	10	10	1.71	1.725	.171	.173	+	.015	.88
Trimmers, female	3	.....	10	.....	.75	.....	.075	.....	.....	.....	.....
Truck hands	4	33	10	10	1.413	1.30	.141	.13	—	.113	8.00
Turners	2	3	10	10	2.00	1.667	.20	.167	—	.333	16.65
Upholsterers	82	84	10	10	2.002	1.983	.20	.198	—	.019	.95
Varnishers	24	39	10	10	1.681	1.816	.168	.182	+	.135	8.03
Veneerers	6	5	10	10	1.325	1.42	.133	.142	+	.095	7.17
Watchmen	23	29	11.22	10.62	1.565	1.519	.139	.143	—	.046	2.94
Weavers .....	.....	1	.....	10	.....	3.50	.....	.35	.....	.....	.....
Wipers	2	.....	10	.....	1.275	.....	.128	.....	.....	.....	.....
Wood workers	11	.....	10	.....	1.659	.....	.166	.....	.....	.....	.....
Yardmen	22	19	10	10	1.539	1.468	.154	.147	—	.071	4.61
Total	3,619	3,473	10	10	\$1.462	\$1.497	\$.146	\$.15	+	\$.035	2.39

TABLE VII—CLASSIFICATION OF DAILY WAGES.

Classified daily wages, (inclusive).	Total number of persons em- ployed.						Average wages per day.					
	Male.		Female.		Total.		Male.		Female.		Total.	
	1904	1905.	1904.	1905	1904.	1905.	1904.	1905.	1904.	1905	1904.	1905.
\$.34 to \$.41..	1	.....			1	.....	\$.40	.....	.....	.....	.....	.....
.42 to .49..	5	1	7	4	12	5	\$.45	\$.45	\$.45	\$.45	.45	\$.45
.50 to .58..	83	71	2	12	85	83	.51	.51	.525	.51	.51	.51
.59 to .66..	54	56	2	7	56	63	.63	.618	.625	.607	.63	.616
.67 to .74..	90	28	6	.....	96	28	.697	.691	.67	.....	.695	.691
.75 to .83..	97	112	31	40	128	152	.764	.77	.76	.779	.764	.773
.84 to .91..	58	41	12	3	70	44	.876	.878	.87	.867	.876	.877
.92 to .99..	8	14	2	.....	10	14	.935	.935	.92	.....	.932	.935
1.00 to 1.08..	124	142	8	15	132	157	1.005	1.003	1.00	1.005	1.005	1.003
1.09 to 1.16..	184	119	3	.....	187	119	1.126	1.127	1.10	.....	1.125	1.127
1.17 to 1.24..	92	68	6	5	98	73	1.198	1.199	1.19	1.194	1.198	1.198
1.25 to 1.33..	481	453	12	10	493	463	1.259	1.26	1.257	1.258	1.259	1.264
1.34 to 1.41..	503	428	1	2	504	440	1.377	1.377	1.35	1.35	1.377	1.377
1.42 to 1.49..	42	58	.....	.....	42	58	1.45	1.454	.....	.....	1.45	1.454
1.50 to 1.58..	586	617	8	9	594	626	1.501	1.505	1.50	1.50	1.501	1.505
1.59 to 1.66..	191	144	.....	.....	191	144	1.62	1.623	.....	.....	1.62	1.623
1.67 to 1.74..	32	64	.....	.....	32	64	1.678	1.678	.....	.....	1.678	1.683
1.75 to 1.83..	291	270	.....	.....	291	270	1.762	1.759	.....	.....	1.762	1.759
1.84 to 1.91..	27	90	.....	.....	27	92	1.872	1.871	.....	.....	1.872	1.871
1.92 to 1.99..	.....	10	.....	.....	.....	10	.....	1.95	.....	.....	.....	1.95
2.00 to 2.08..	232	227	1	1	233	223	2.00	2.00	2.00	2.00	2.00	2.00
2.09 to 2.16..	5	10	.....	.....	5	10	2.122	2.126	.....	.....	2.122	2.126
2.17 to 2.24..	11	15	.....	.....	11	15	2.175	2.17	.....	.....	2.175	2.17
2.25 to 2.33..	120	90	.....	.....	120	93	2.253	2.254	.....	.....	2.253	2.254
2.34 to 2.41..	6	15	.....	.....	6	13	2.37	2.38	.....	.....	2.37	2.38
2.50 to 2.58..	108	107	.....	.....	108	107	2.50	2.50	.....	.....	2.50	2.50
2.59 to 2.66..	8	10	.....	.....	8	10	2.626	2.627	.....	.....	2.626	2.627
2.67 to 2.74..	4	1	.....	.....	4	1	2.68	2.67	.....	.....	2.68	2.67
2.75 to 2.83..	24	33	.....	.....	24	33	2.754	2.76	.....	.....	2.754	2.76
2.84 to 2.91..	1	1	.....	.....	1	1	2.88	2.88	.....	.....	2.88	2.88
3.00 to 3.08..	24	25	.....	.....	24	25	3.00	3.00	.....	.....	3.00	3.00
3.09 to 3.16..	1	.....	.....	.....	1	.....	3.12	.....	.....	.....	3.12	.....
3.17 to 3.24..	1	1	.....	.....	1	1	3.20	3.20	.....	.....	3.20	3.20
3.25 to 3.33..	13	7	.....	.....	13	7	3.311	3.261	.....	.....	3.311	3.261
3.50 to 3.58..	8	12	.....	.....	8	12	3.50	3.50	.....	.....	3.50	3.50
3.67 to 3.74..	1	1	.....	.....	1	1	3.67	3.67	.....	.....	3.67	3.67
3.75 to 3.83..	1	1	.....	.....	1	1	3.80	3.80	.....	.....	3.80	3.80
4.00 to 4.08..	1	2	.....	.....	1	2	4.00	4.00	.....	.....	4.00	4.00
4.17 to 4.24..	.....	2	.....	.....	.....	2	.....	4.17	.....	.....	.....	4.17
5.25 to 5.33..	.....	1	.....	.....	.....	1	.....	5.25	.....	.....	.....	5.25
Total and av.	3,515	3,365	101	108	3,619	3,473	\$1.477	\$1.517	\$.933	\$.905	\$1.462	\$1.497

Remarks.—This industry, for many years one of the most important in the state, experienced a moderate growth during the years 1904 and 1905. There was an increase in the materials used, the average number of persons employed, the total wages and salaries paid, and the output. About 5 per cent. of the capital invested in this industry in 1904 was withdrawn in 1905. But the fact that there was an increase of 12 per cent. in the amount invested in land, and of 6 per cent. in the amount invested in buildings, makes it probable that the capital withdrawn

was only employed elsewhere temporarily, during a period when more cash capital was on hand than was needed in the conduct of the business. About 63 per cent. of the industry product, a large proportion, was paid in wages and salaries each year. Employment was more nearly uniform in 1905 than in 1904. The number of female employees was less than 3 per cent. of the total number each year. They were employed chiefly in the regular work of the industry, only a few working in the auxiliary occupations. Their hours of labor increased slightly for 1905, but were still less than 10 per day. There was a decrease of about 3 per cent. in their average daily wages. Men's wages, on the contrary, increased slightly.

27. FURS, GLOVES AND MITTENS—17 ESTABLISHMENTS.

TABLE I—MANAGEMENT AND OPERATION.

Classification.	Number in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Number of private firms	11	9	— 2	18.18
Number of male partners	17	13	— 4	23.53
Number of female partners	1	1	— 1	100.00
Total number of partners	18	13	— 5	27.78
Number of corporations	6	8	+ 2	33.33
Number of male stockholders	24	44	+ 20	83.33
Number of female stockholders	1	8	+ 7	700.—
Total number of stockholders	25	52	+ 27	108.—
Total number of partners and stockholders ..	43	65	+ 22	51.16
Smallest number of persons employed	776	857	+ 81	10.44
Greatest number of persons employed	981	1,039	+ 58	5.91
Average number of persons employed	831	952	+ 71	8.06
Average days in operation	275	286	+ 11	4.—

TABLE II—INVESTMENT.

Classification.	Capital invested in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Land	\$16,300 00	\$16,300 00		
Buildings and fixtures	56,800 64	61,067 31	+ \$4,266 67	7.51
Machinery, etc.,	107,929 58	126,784 96	+ 18,855 38	17.47
Cash and other capital	900,887 98	881,138 33	— 19,749 65	2.19
Total	\$1,081,918 20	\$1,085,290 60	+ \$3,372 40	0.31

TABLE III A—VALUE OF MATERIALS AND LABOR EMPLOYED, AND OF PRODUCT.

Classification.	Value of material used, wages and salaries paid in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Raw material used	\$1,248,905 01	\$1,432,397 90	+ \$183,492 89	14.69
Other material used	112,119 56	112,618 48	+ 498 92	0.45
Wages	373,168 08	407,072 99	+ 33,904 91	9.09
Salaries	102,113 77	116,796 89	+ 14,683 12	14.38
Profit and minor expenses ...	105,698 61	122,500 43	+ 16,810 82	15.90
Goods made and work done..	1,942,005 03	2,191,395 69	+ 249,390 66	12.84

TABLE III B—ANALYSIS OF TABLE III A.

Classification.	1904.	1905.
Value of goods made and work done (gross product)	\$1,942,005 03	\$2,191,395 69
Value of stock used and other material consumed in production	1,361,024 57	1,545,016 38
Industry product (gross product less value of stock and material)	580,980 46	646,379 31
Wages and salaries (Labor's direct share of prod- uct)	475,281 85	523,869 88
Profit and minor expense fund (industry product less wages)	105,698 61	122,500 43
Percentage of industry product paid in wages	Per cent. 81.29	Per cent. 81.05
Percentage of industry product devoted to profit and minor expenses	18.71	18.95

TABLE IV—AVERAGE CAPITAL, ETC., PER EMPLOYEE.

Classification.	Average capital, product and yearly earnings in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Average capital per employee	\$1,228 05	\$1,140 01	— \$88 04	7.17
Average product per employee	2,204 32	2,301 89	+ 97 57	4.43
Average yearly earnings	423 57	427 60	+ 4 03	0.95

TABLE V—RANGE OF EMPLOYMENT AND OF UNEMPLOYMENT.

Months.	Total no. of persons employed in		Percentages of			
	1904.	1905.	Employment in		Unemployment in	
			1904.	1905.	1904.	1905.
January	776	857	79.10	82.48	20.90	17.52
February	817	857	83.28	82.48	16.72	17.52
March	840	903	85.63	86.91	14.37	13.09
April	874	943	89.09	90.76	10.91	9.24
May	930	969	94.80	93.23	5.20	6.74
June	938	1,006	95.62	96.82	4.38	3.18
July	964	1,039	98.27	100.00	1.73	.....
August	954	1,036	97.25	99.71	2.75	0.29
September	981	1,033	100.—	99.42	.....	0.58
October	906	986	92.36	94.90	7.64	5.10
November	808	903	82.36	86.91	17.64	13.09
December	778	896	79.31	83.24	20.69	13.76
Average	881	952	89.81	91.63	10.19	8.37

TABLE VI—OCCUPATIONS AND WAGES OF EMPLOYEES.

Occupations.	Total no. of persons,		Average hours per day.		Average wages per day.		Average wages per hour.		Increase, +, or decrease, —, per day in 1905.		
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	Amt	Per ct.	
Apprentices	9	16	9.56	9.00	\$.944	\$.75	\$.099	\$.083	—	\$.194	20.55
Apprentices, female	8	11	10.00	9.00	.50	.50	.05	.056			
Binders, female	11	7	9.64	9.00	1.659	1.75	.172	.194	+	.091	5.49
Carpenters	1	1	10.00	10.00	2.25	1.17	.225	.117	—	.108	45.00
Cleaners	2		8.00		2.00		.25				
Clerks	9	5	9.78	10.00	1.876	2.008	.192	.207	+	.192	10.23
Clerks, female	7	2	8.71	9.00	1.286	1.50	.148	.167	+	.214	16.64
Combers	2	2	10.00	9.00	2.20	2.20	.22	.244			
Cutters	190	204	9.66	9.56	2.047	2.106	.212	.220	+	.059	2.88
Cutters, female	4	1	9.00	10.00	1.25	.50	.129	.05			60.00
Cutters' helpers	4	19		10.00		.612		.061			
Distributors	8		10.00		2.53		.253				
Distributors, female	2		10.00		1.00		.10				
Engineers		2	10.00			2.25		.225			
Eyelet stringers	1	1	10.00	9.00	2.25	2.25	.225	.25			
Finishers	3	4	10.00	9.25	2.00	2.125	.20	.23	+	.125	6.25
Finishers, female	9	10	9.33	9.20	1.633	1.614	.178	.175	—	.049	2.95
Fitters	6	6	9.33	9.33	4.055	4.055	.413	.435			
Fitters, female	10	10	10.00	9.00	2.00	2.00	.20	.222			
Foremen	6	8	9.60	9.88	2.57	3.073	.286	.311	+	.503	19.57
Forewomen	4	3	8.75	9.33	1.655	1.307	.189	.140	—	.348	21.03
Formers	22	25	9.95	10.00	1.131	1.295	.114	.13	+	.104	14.50
Formers, female	5	3	9.00	10.00	.802	1.097	.089	.11	+	.295	36.78
Furriers	8	8	10.00	10.00	1.564	1.731	.156	.173	+	.167	10.68
Glove makers, female		15		10.00		.75		.075			
Helpers	19	20	9.42	9.90	1.048	1.142	.111	.115	+	.094	8.97
Helpers, female	14	13	9.00	10.00	.854	.788	.095	.079	—	.066	7.73
Inspectors	5	3	10.00	9.88	1.75	1.594	.175	.161	—	.156	8.91
Inspectors, female		1		10.00		1.33		.133			
Laborers		11		10.00		1.485		.149			
Liners, female	14	29	9.96	9.00	1.596	1.109	.16	.123	—	.487	30.39
Machine operators	8	19	9.81	9.37	2.646	2.334	.27	.249	—	.312	11.79
Machine operators, female	208	405	9.51	9.70	1.323	1.023	.139	.105	—	.30	22.68
Machinists	6	3	9.33	9.33	3.112	3.00	.334	.332	—	.112	3.60
Nailers	11	11	9.45	9.45	2.068	1.841	.219	.195	—	.227	10.98
Office-boys	2	3	10.00	9.67	.90	.80	.09	.083	—	.10	11.11
Packers	7	5	9.57	9.50	1.953	1.90	.204	.20	—	.053	2.71
Packers, female	4	4	10.00	10.00	.69	.618	.06	.062	+	.018	3.00
Pasters	2		10.00		1.40		.14				
Pasters, female	0	6	10.00	9.00	.85	.85	.085	.094			
Repairers, female	7		10.00		.77		.077				
Sewers	6	7	9.00	9.14	4.00	3.857	.444	.422	—	.143	3.58
Sewers, female	298	155	9.37	9.23	.872	.802	.093	.087	—	.07	8.03
Tailors	2	2	10.00	10.00	2.00	2.335	.20	.234	+	.335	16.75
Tanners	4	8	10.00	9.75	2.063	1.719	.206	.176	—	.344	16.67
Teamsters	1	7	10.00	10.00	3.00	3.17	.30	.317	+	.17	5.97
Time-keepers, female		1		10.00		1.00		.10			
Trimmers		2		9.00		1.50		.167			
Trimmers, female	6		9.50		.675		.071				
Turners	8	15	9.00	9.94	1.055	.877	.117	.088	—	.178	16.87
Turners, female	3	3	10.00	10.00	.50	.617	.05	.062	+	.117	28.50
Total	968	1,096	9.53	9.57	\$1,402	\$1,324	\$.147	\$.138	—	\$.078	5.56

TABLE VII—CLASSIFICATION OF DAILY WAGES.

Classified daily wages, (inclusive).	Total number of persons employed.						Average wages per day.					
	Male.		Female.		Total.		Male.		Female.		Total.	
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.
\$0.33 or less..	5	3	13	3	18	.....	\$0.246	\$0.233	\$0.242	\$0.233	\$0.243	
.34 to .41.	3	.....	12	.....	15	.....	.367	.....	.374	.....	.373	
.42 to .49.	1	1	12	1	13	.....	.43	.44	.454	.44	.452	
.50 to .58.	8	19	19	49	27	68	\$0.50	.508	.522	.527	.510	.522
.59 to .66.	1	2	88	125	89	127	.60	.605	.627	.643	.627	.642
.67 to .74.	1	9	13	24	14	33	.67	.69	.69	.701	.689	.697
.75 to .83.	11	9	89	63	100	72	.801	.781	.785	.772	.787	.773
.84 to .91.	.....	2	12	80	12	82	.....	.875	.869	.876	.889	.876
.92 to .99.	8	5	134	23	142	28	.92	.936	.968	.959	.965	.955
1.00 to 1.08.	5	24	46	50	51	74	1.01	1.018	1.00	1.019	1.001	1.018
1.09 to 1.16.	21	9	5	15	26	24	1.09	1.13	1.142	1.135	1.10	1.127
1.17 to 1.24.	.....	6	13	17	13	23	.....	1.185	1.172	1.195	1.172	1.192
1.25 to 1.33.	13	19	46	50	59	69	1.266	1.271	1.304	1.272	1.296	1.271
1.34 to 1.41.	1	1	1	14	2	15	1.40	1.35	1.40	1.382	1.40	1.38
1.42 to 1.49.	.....	6	2	8	2	14	.....	1.458	1.45	1.461	1.45	1.46
1.50 to 1.58.	28	40	51	62	109	102	1.50	1.504	1.512	1.515	1.509	1.511
1.59 to 1.66.	.....	2	3	7	3	9	.....	1.63	1.65	1.613	1.65	1.616
1.67 to 1.74.	8	18	7	13	15	31	1.705	1.686	1.67	1.672	1.689	1.68
1.75 to 1.83.	55	19	13	15	68	34	1.763	1.763	1.773	1.77	1.768	1.763
1.84 to 1.91.	.....	3	.....	1	.....	9	.....	1.865	.....	1.88	.....	1.856
1.92 to 1.99.	.....	4	.....	.....	.....	4	.....	1.953	.....	.....	.....	1.953
2.00 to 2.08.	30	71	56	20	116	91	2.00	2.007	2.00	2.00	2.00	2.005
2.09 to 2.16.	.....	3	.....	.....	.....	3	.....	2.113	.....	.....	.....	2.113
2.17 to 2.24.	5	4	.....	.....	5	4	2.182	2.185	.....	.....	2.182	2.185
2.25 to 2.33.	4	13	4	6	8	21	2.25	2.257	2.25	2.25	2.25	2.255
2.34 to 2.41.	.....	3	.....	.....	.....	3	.....	2.40	.....	.....	.....	2.40
2.42 to 2.49.	.....	4	.....	.....	.....	4	.....	2.445	.....	.....	.....	2.445
2.50 to 2.58.	47	25	4	.....	51	25	2.505	2.501	2.50	.....	2.505	2.501
2.67 to 2.74.	2	1	.....	.....	2	1	2.67	2.70	.....	.....	2.67	2.70
2.75 to 2.83.	21	40	.....	.....	21	40	2.75	2.752	.....	.....	2.75	2.752
3.00 to 3.08.	11	23	.....	.....	11	22	3.00	3.00	.....	.....	3.00	3.00
3.17 to 3.24.	.....	1	.....	.....	.....	1	.....	3.17	.....	.....	.....	3.17
3.25 to 3.33.	2	3	.....	.....	2	3	3.33	3.297	.....	.....	3.33	3.297
3.50 to 3.58.	3	2	.....	.....	3	2	3.50	3.50	.....	.....	3.50	3.50
4.00 to 4.08.	11	9	.....	.....	11	9	4.009	4.011	.....	.....	4.009	4.011
4.50 to 4.53.	1	1	.....	.....	1	1	4.50	4.50	.....	.....	4.50	4.50
4.67 to 4.74.	.....	1	.....	.....	.....	1	.....	4.67	.....	.....	.....	4.67
8.25 to 8.33.	1	1	.....	.....	1	1	8.33	8.33	.....	.....	8.33	8.33
Total ...	348	417	620	679	968	1,096	\$1.977	\$1.877	\$1.08	\$.935	\$1.402	\$1.324

Remarks.—This industry experienced a considerable growth in the years 1904 and 1905. Although there was but little increase in the total capital invested, the amount devoted to buildings increased 7½ per cent. and that devoted to machinery 17 per cent., indicating the more permanent establishment of the industry. There was an increase in 1905 of 4 per cent. in the average number of days of operation, of 8 per cent. in the number of employees, of 14 per cent. in the value of the materials used, and of 13 per cent. in the output. There was a very slight increase in the average yearly earnings of employees, in

spite of a decrease in the average daily wages paid—the apparent inconsistency being due to the irregularity in the length of time workmen were employed each year. A very large proportion, 81 per cent., of the industry product was paid in wages. A large number of children were employed in this industry, particularly during the summer vacation. About $\frac{3}{5}$ of all employees were females. They were employed chiefly in the regular occupations of the industry, only a few working in the minor employments. Their hours of labor were slightly less than 10 per day. There was a marked decrease in their average daily wages. It was chiefly among the better paid employees that this loss occurred. Thus there were 44 women receiving \$2.00 or over per day in 1904, while in 1905 the number was but 26.

28. IRON—35 ESTABLISHMENTS.

TABLE I—MANAGEMENT AND OPERATION.

Classification.	Number in		Increase, +, or decrease, —, in 1905.	
	1904.	1905	Amount.	Per cent.
Number of private firms	13	11	— 2	15.38
Number of male partners	22	19	— 3	13.64
Number of female partners	1	.....	— 1	100.—
Total number of partners	23	19	— 4	17.39
Number of corporations	22	24	+ 2	9.09
Number of male stockholders	162	161	— 1	0.62
Number of female stockholders	28	46	+ 18	64.29
Total number of stockholders	190	207	+ 17	8.95
Total number of partners and stockholders.	213	226	+ 13	6.10
Smallest number of persons employed	3,810	4,909	+ 1,094	28.71
Greatest number of persons employed	4,775	5,781	+ 1,006	21.07
Average number of persons employed	4,144	5,221	+ 1,077	25.99
Average days in operation	301	322	+ 21	6.98

TABLE II— INVESTMENT.

Classification.	Capital invested in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent.
Land	\$776,570 84	\$833,560 41	+ \$57,019 57	7.34
Buildings and fixtures	1,230,953 79	1,336,640 97	+ 105,683 18	8.59
Machinery, etc.	1,339,557 74	1,419,892 79	+ 80,335 05	6.00
Cash and other capital	2,932,730 06	3,256,370 49	+ 323,640 43	11.04
Total	\$6,279,817 43	\$6,846,494 06	+ \$566,677 23	9.02

TABLE III A—VALUE OF MATERIALS AND LABOR EMPLOYED, AND OF PRODUCT.

Classification.	Value of material used, wages and salaries paid in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent.
Raw material used	\$5,227,037 99	\$8,453,827 91	+\$3,226,790 92	61.73
Other material used	1,058,766 36	1,213,271 48	+ 154,505 12	14.50
Wages	2,169,278 55	2,738,056 44	+ 568,777 89	27.46
Salaries	337,394 46	338,231 27	+ 836 81	0.25
Profit and minor expenses ...	2,327,880 47	2,784,032 75	+ 456,152 28	19.60
Goods made and work done..	11,120,357 83	15,527,419 85	+ 4,407,062 02	39.63

TABLE III B—ANALYSIS OF TABLE III A.

Classification.	1904.	1905.
Value of goods made and work done (gross product)	\$11,120,357 83	\$15,527,419 85
Value of stock used and other material consumed in production	6,285,804 35	9,667,099 39
Industry product (gross production less value of stock and material)	4,834,553 48	5,860,320 46
Wages and salaries (Labor's direct share of product)	2,506,673 01	3,076,287 71
Profit and minor expense fund (industry product less wages)	2,327,880 47	2,784,032 75
	Per cent.	Per cent.
Percentage of industry product paid in wages.....	51.85	52.49
Percentage of industry product devoted to profit and minor expenses	48.15	47.51

TABLE IV—AVERAGE CAPITAL, ETC., PER EMPLOYEE.

Classification.	Average capital, product and yearly earnings in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent.
Average capital per employee	\$1,515 40	\$1,311 34	— \$204 06	13.47
Average product per employee	2,633 48	2,974 03	+ 290 55	10.83
Average yearly earnings	523 47	524 43	+ 0.96	0.18

TABLE V—RANGE OF EMPLOYMENT AND OF UNEMPLOYMENT.

Months.	Total no. of persons employed in		Percentages of			
			Employment in		Unemployment in	
	1904.	1905.	1904.	1905.	1904.	1905.
January	3,810	4,983	79.79	86.20	20.21	13.80
February	4,047	5,151	84.75	89.10	15.25	10.90
March	4,224	5,293	88.46	91.56	11.54	8.44
April	4,209	5,100	88.15	88.22	11.85	11.78
May	3,974	5,145	83.23	89.00	16.77	11.00
June	3,916	4,989	82.01	86.30	17.99	13.70
July	3,811	4,904	79.81	84.83	20.19	15.17
August	3,943	5,043	82.59	87.23	17.42	12.77
September	4,064	5,228	85.11	90.44	14.89	9.56
October	4,332	5,410	90.72	93.58	9.28	6.42
November	4,618	5,619	96.71	97.20	3.29	2.80
December	4,775	5,781	100.—	100.—	.....	.....
Average	4,144	5,221	86.79	90.31	13.21	9.69

TABLE VI—OCCUPATIONS AND WAGES OF EMPLOYEES.

Occupations.	Total no. of persons.		Average hours per day.		Average wages per day.		Average wages per hour.		Increase, +, or decrease, —, per day in 1905.		
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	Amt. Per ct.		
									Amt.	Per ct.	
Acetate men	12	10	.....	.....	\$2.017	.....	\$ .202	.....	.....	.....
Alcohol men	6	11.67	.....	.....	2.183	.....	.187	.....	.....	.....
Apprentices	111	64	10	10	\$1.405	1.075	\$.141	.108	—	\$.330	23.49
Ash pullers	8	10	11.5	11.2	1.60	1.623	.139	.145	+	.028	.175
Assemblers	1	2	10	10	1.75	1.75	.175	.175	.....	.....	.....
Assorters	18	7	10	10	1.236	1.271	.124	.127	+	.035	2.83
Babblers	1	1	10	8	1.92	1.64	.192	.21	—	.23	14.58
Barrowmen	16	12	.....	.....	1.85	.....	.164	.....	.....	.....	.....
Blacksmiths	24	26	10	10.08	2.32	2.389	.232	.237	+	.069	2.97
Blacksmiths' helpers.	5	5	10	10.4	1.50	1.64	.150	.158	+	.14	9.33
Blast men	7	.....	11.14	.....	1.879	.....	.169	.....	.....	.....	.....
Boiler makers	6	6	10	10	2.358	2.533	.236	.258	+	.225	9.54
Boiler washers	3	4	12	13	1.883	2.015	.157	.168	+	.132	7.01
Bookkeepers	1	1	.....	.....	3.20	.....	.32	.....	.....	.....	.....
Boys	339	126	10.06	9.94	.921	1.052	.105	.105	+	.131	14.22
Brakemen	19	10	.....	.....	2.011	.....	.201	.....	.....	.....	.....
Baggagemen	22	12	.....	.....	1.773	.....	.148	.....	.....	.....	.....
Cagers	4	4	12	12	1.80	1.90	.15	.158	+	.10	5.53
Carpenters	27	23	10	10	2.283	2.425	.229	.243	+	.142	6.22
Carriers	8	.....	10	.....	1.95	.....	.195	.....	.....	.....	.....
Cartmen	5	.....	10	.....	1.85	.....	.185	.....	.....	.....	.....
Catchers	9	9	8	8	4.433	4.613	.554	.577	+	.180	4.06
Chargers	26	28	12	11.71	1.747	1.833	.146	.157	+	.089	4.92
Chippers	43	.....	10	.....	1.709	.....	.171	.....	.....	.....	.....
Cinder snappers	4	4	12	12	1.84	1.90	.153	.158	+	.06	3.26
Cleaners	8	8	12	12	1.563	1.633	.13	.137	+	.075	4.80
Clerks	3	3	10	10	2.50	1.95	.25	.195	—	.55	22.00
Clippers	23	.....	10	.....	1.709	.....	.171	.....	.....	.....	.....
Coal hands	2	20	12	12	1.92	1.854	.16	.155	—	.066	3.44
Core boys	9	.....	10	.....	1.189	.....	.119	.....	.....	.....	.....
Core makers	104	165	10	10	1.607	1.694	.161	.161	+	.087	5.41

TABLE VI—OCCUPATIONS AND WAGES OF EMPLOYEES.—Continued.

Occupations.	Total no. of persons.		Average hours per day.		Average wages per day.		Average wages per hour.		Increase, +, or decrease, —, per day in 1905.		
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	Amt.	Pct.	
Core makers, female	.....	15	.....	10	.....	.70	.....	.07	.....	.....	.....
Counters	18	17	11	11	1.67	1.76	.152	.16	+	.09	5.39
Crane men	6	8	10.67	10.5	2.033	2.181	.195	.208	+	.098	4.70
Cupola tenders	4	17	10	10	2.125	2.133	.213	.209	+	.057	2.63
Cutters	9	.....	10	.....	1.867	.....	.187	.....	.....	.....	.....
Drillers	4	2	10	10	1.55	1.625	.155	.163	+	.075	4.84
Drillers' helpers	2	.....	10	.....	1.05	.....	.105	.....	.....	.....	.....
Drivers	3	.....	10	.....	1.52	.....	.152	.....	.....	.....	.....
Electricians	7	8	10.57	10.25	1.907	2.004	.18	.204	+	.187	9.81
Electricians' helpers	1	.....	10	.....	1.75	.....	.175	.....	.....	.....	.....
Engineers	40	42	11.34	11.5	2.376	2.434	.21	.216	+	.108	4.55
Engine wipers	2	.....	12	.....	1.66	.....	.138	.....	.....	.....	.....
Fillers	.....	4	.....	10	.....	2.60	.....	.26	.....	.....	.....
Fillers	25	26	11.04	11.08	1.748	1.846	.158	.166	+	.098	5.61
Finishers	23	22	11.48	10.91	2.857	2.912	.249	.267	+	.075	1.93
Firemen	43	62	11.77	11.55	1.81	1.917	.154	.166	+	.107	5.91
Flask carriers	2	2	10	10	1.85	1.80	.185	.18	—	.05	2.70
Foremen	17	17	10.47	10.47	2.096	2.256	.20	.216	+	.160	7.63
Framers	12	.....	12	.....	1.75	.....	.146	.....	.....	.....	.....
Furnace tenders	9	15	10.44	11.33	2.344	2.203	.225	.195	—	.141	6.02
Gas men	2	2	12	12	2.02	2.15	.168	.179	+	.13	6.44
Gate tenders	1	.....	10	.....	1.50	.....	.15	.....	.....	.....	.....
Girls	.....	19	.....	10	.....	.658	.....	.066	.....	.....	.....
Graders	.....	1	.....	12	.....	2.30	.....	.192	.....	.....	.....
Grate men	2	.....	10	.....	1.45	.....	.145	.....	.....	.....	.....
Grinders	6	15	10.33	10	1.80	1.82	.174	.182	+	.02	1.11
Handy men	.....	134	.....	10	.....	1.585	.....	.159	.....	.....	.....
Heaters	12	12	12	12	5.30	5.30	.442	.442	.....	.....	.....
Helpers	220	344	10.24	10.16	1.406	1.555	.137	.153	+	.149	10.00
Helpers, female	.....	12	.....	10	.....	.15	.....	.115	.....	.....	.....
Hooks	43	42	8	8	2.554	2.835	.319	.354	+	.281	11.00
Hot bed men	63	18	12	12	1.598	1.319	.16	.132	—	.279	17.46
Hot sawyers	.....	2	.....	12	.....	2.45	.....	.204	.....	.....	.....
Inspectors	6	3	10.83	12	2.667	1.833	.246	.157	—	.784	29.40
Iron carriers	18	20	12	12	2.07	2.15	.173	.179	+	.08	3.83
Iron workers	14	1	10	10	2.036	2.50	.204	.25	+	.464	22.74
Japanners	6	8	10	10	1.533	1.513	.153	.151	—	.020	1.30
Keepers	16	4	12	12	1.993	2.40	.166	.166	+	.407	20.42
Kiln tenders	.....	4	.....	12	.....	1.85	.....	.154	.....	.....	.....
Knife changers	2	2	10	12	1.93	2.05	.198	.171	+	.07	3.52
Laborers	1,400	1,809	10.10	9.94	1.492	1.54	.148	.155	+	.048	3.22
Lathe hands	1	.....	10	.....	1.75	.....	.175	.....	.....	.....	.....
Lever men	.....	2	.....	12	.....	1.72	.....	.143	.....	.....	.....
Loaders	56	36	10.57	10.78	1.717	1.734	.162	.161	+	.017	.99
Machine hands	203	374	10	10	1.746	2.038	.175	.204	+	.292	16.72
Machine tenders	.....	58	.....	10	.....	1.369	.....	.137	.....	.....	.....
Machinists	104	225	10	10.06	2.443	2.936	.244	.292	+	.493	20.18
Machinists' helpers	4	.....	10	.....	1.10	.....	.11	.....	.....	.....	.....
Masons	1	2	10	9	3.50	2.975	.35	.331	—	.525	15.00
Millwrights	.....	4	.....	12	.....	2.685	.....	.224	.....	.....	.....
Molders	976	876	9.70	9.87	2.408	2.523	.247	.250	+	.115	4.78
Molders' helpers	.....	6	.....	10	.....	1.358	.....	.136	.....	.....	.....
Mold tenders	.....	1	.....	10	.....	1.00	.....	.10	.....	.....	.....
Motormen	.....	2	.....	12	.....	1.85	.....	.154	.....	.....	.....
Mounters	27	26	10	10	2.343	2.529	.234	.253	+	.186	7.94
Nickel platers	4	1	10	10	2.50	2.50	.25	.25	.....	.....	.....
Nickel platers' helpers	.....	2	.....	10	.....	1.25	.....	.125	.....	.....	.....
Oilers	13	15	11.85	11.87	1.793	1.885	.151	.159	+	.092	5.13
Packers	4	11	10	10	1.50	1.159	.15	.116	—	.341	22.73
Painters	4	3	10	10	1.70	1.90	.17	.19	+	.20	11.76
Passers	.....	7	.....	12	.....	1.64	.....	.137	.....	.....	.....
Pattern makers	53	43	10	10	2.588	2.67	.259	.267	+	.082	3.17
Pilers	26	30	12	12	1.66	1.71	.138	.143	+	.05	3.01
Platers	10	.....	10	.....	2.00	.....	.20	.....	.....	.....	.....

TABLE VI—OCCUPATIONS AND WAGES OF EMPLOYEES.—Continued.

Occupations.	Total no. of persons.		Average hours per day.		Average wages per day.		Average wages per hour.		Increase, +, or decrease, —, per day in 1905.	
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	Amt.	Per ct.
Pokers	3		8		2.10		.263			
Polishers	14	25	10	10	2.464	2.774	.246	.277	+ .310	12.58
Pressmen	3	3	10	10	1.817	2.56	.182	.256	+ .743	40.89
Pourers	8		10		1.975		.198			
Pulpit men	10	12	12	12	1.65	1.70	.138	.142	+ .05	3.03
Pump men	1	3	10	11.33	2.10	1.967	.21	.174	— .133	6.33
Pump tenders	2		12		1.75		.146			
Punchers	4	3	11	11	1.83	1.923	.166	.175	+ .093	5.03
Rail breakers	4		10		2.05		.205			
Range makers		1		10		2.25		.225		
Riggers		28		10		1.62		.162		
Roller hands	4	4	12	11	1.575	1.618	.131	.147	+ .043	2.73
Rollers	6	12	12	12	8.917	11.083	.743	.924	+ 2.106	24.29
Roll turners	13	19	10	10	2.819	2.874	.282	.287	+ .053	1.95
Roughers	51	50	8	8	4.215	4.48	.527	.56	+ .295	6.29
Samplers		2		10		1.50		.15		
Sand-blast men		4		10		1.85		.185		
Sand cutters	2		10		1.75		.175			
Saw tenders		8		10		1.756		.176		
Section men		1		10		1.85		.185		
Shakers	1		10		1.50		.150			
Shearsmen	40	20	12	11.80	1.918	2.111	.16	.179	+ .193	10.06
Sheet metal workers		22		10		2.318		.222		
Shipping clerks	16	17	10	10	1.625	1.99	.163	.199	+ .367	22.46
Spellers	10	10	9.6	8.3	2.308	2.377	.24	.259	— .031	1.34
Steam fitters	7	5	10	10	2.296	2.30	.230	.26	+ .304	13.24
Stockers	30	26	12	12	1.761	1.827	.147	.152	+ .066	3.75
Stove tenders	2	2	12	12	1.84	1.90	.153	.158	+ .06	3.26
Straighteners	54	55	11.86	10.55	2.027	2.132	.171	.202	+ .107	5.18
Stranders	23	24	9.43	9	2.697	3.615	.286	.318	+ .918	34.04
Sweepers		1		10		1.60		.16		
Switchmen	8	5	12	11.8	1.795	1.964	.15	.166	+ .169	9.42
Tallymen	2	2	12	12	1.75	1.80	.146	.15	+ .05	2.83
Teamsters	33	26	10	10.19	1.888	1.793	.189	.176	— .095	5.03
Timber men	27		10		1.65		.165			
Tinners	9	9	10	10	2.622	2.853	.262	.285	— .293	10.26
Tool makers		2		10		3.25		.325		
Tool tenders		1		10		1.85		.185		
Tracers	1	1	8	8	1.00	1.25	.125	.156	+ .25	25.00
Transfer men	2	2	12	12	1.70	1.75	.42	.146	+ .05	2.94
Wagon makers	2	2	10	10	2.00	2.00	.20	.20		
Washers	3		10		1.65		.165			
Watchmen	26	30	11.54	11.1	1.598	1.736	.138	.156	+ .138	8.64
Water tenders	4	2	12	12	2.248	2.625	.187	.219	+ .377	16.77
Whitewashers		3		10		1.75		.175		
Wipers		6		12		1.903		.159		
Wire workers	7	8	10	10	1.929	2.075	.193	.208	+ .146	7.57
Wood handlers		28		10		1.75		.175		
Total and averages	4,740	5,550	10.2	10.06	\$1.847	\$1.952	\$.181	\$.194	+ \$.105	5.68

TABLE VII—CLASSIFICATION OF DAILY WAGES.

Classified daily wages, (inclusive.)	Total number of persons employed.						Average wages per day.					
	Male.		Female.		Total.		Male.		Female.		Total.	
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.
\$.42 to .49.	1	1	.....	.....	.....	1	.....	.....	.....	.....	.....	.....
.50 to .58.	16	17	.....	5	16	22	.....	.....	.....	.....	.....	.....
.59 to .66.	8	15	.....	13	8	28	.....	.....	.....	.....	.....	.....
.67 to .74.	61	20	.....	.....	61	20	.....	.....	.....	.....	.....	.....
.75 to .83.	75	36	.....	15	75	51	.....	.....	.....	.....	.....	.....
.84 to .91.	203	24	.....	.....	202	24	.....	.....	.....	.....	.....	.....
.92 to .99.	1	1	.....	.....	1	1	.....	.....	.....	.....	.....	.....
1.00 to 1.08.	138	92	.....	1	138	93	.....	.....	.....	.....	.....	.....
1.09 to 1.16.	23	50	.....	12	23	62	.....	.....	.....	.....	.....	.....
1.17 to 1.24.	34	7	.....	.....	34	7	.....	.....	.....	.....	.....	.....
1.25 to 1.33.	163	207	.....	.....	163	207	.....	.....	.....	.....	.....	.....
1.34 to 1.41.	179	137	.....	.....	179	137	.....	.....	.....	.....	.....	.....
1.42 to 1.49.	506	11	.....	.....	506	11	.....	.....	.....	.....	.....	.....
1.50 to 1.58.	572	1,325	.....	.....	572	1,325	.....	.....	.....	.....	.....	.....
1.59 to 1.66.	298	457	.....	.....	298	457	.....	.....	.....	.....	.....	.....
1.67 to 1.74.	320	326	.....	.....	320	326	.....	.....	.....	.....	.....	.....
1.75 to 1.83.	313	405	.....	.....	313	405	.....	.....	.....	.....	.....	.....
1.84 to 1.91.	142	131	.....	.....	142	131	.....	.....	.....	.....	.....	.....
1.92 to 1.99.	20	61	.....	.....	20	61	.....	.....	.....	.....	.....	.....
2.00 to 2.08.	238	432	.....	.....	238	432	.....	.....	.....	.....	.....	.....
2.09 to 2.16.	56	86	.....	.....	56	86	.....	.....	.....	.....	.....	.....
2.17 to 2.24.	194	221	.....	.....	194	221	.....	.....	.....	.....	.....	.....
2.25 to 2.33.	116	196	.....	.....	116	196	.....	.....	.....	.....	.....	.....
2.34 to 2.41.	61	99	.....	.....	61	99	.....	.....	.....	.....	.....	.....
2.42 to 2.49.	145	10	.....	.....	145	10	.....	.....	.....	.....	.....	.....
2.50 to 2.58.	311	280	.....	.....	311	280	.....	.....	.....	.....	.....	.....
2.59 to 2.66.	39	74	.....	.....	39	74	.....	.....	.....	.....	.....	.....
2.67 to 2.74.	7	16	.....	.....	7	16	.....	.....	.....	.....	.....	.....
2.75 to 2.83.	151	233	.....	.....	151	233	.....	.....	.....	.....	.....	.....
2.84 to 2.91.	25	39	.....	.....	25	39	.....	.....	.....	.....	.....	.....
2.92 to 2.99.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
3.00 to 3.08.	174	68	.....	.....	174	68	.....	.....	.....	.....	.....	.....
3.09 to 3.16.	11	37	.....	.....	11	37	.....	.....	.....	.....	.....	.....
3.17 to 3.24.	.....	34	.....	.....	.....	34	.....	.....	.....	.....	.....	.....
3.25 to 3.33.	29	73	.....	.....	29	73	.....	.....	.....	.....	.....	.....
3.34 to 3.41.	7	10	.....	.....	7	10	.....	.....	.....	.....	.....	.....
3.42 to 3.49.	4	4	.....	.....	4	4	.....	.....	.....	.....	.....	.....
3.50 to 3.58.	14	15	.....	.....	14	15	.....	.....	.....	.....	.....	.....
3.59 to 3.66.	19	3	.....	.....	19	3	.....	.....	.....	.....	.....	.....
3.67 to 3.74.	.....	11	.....	.....	.....	11	.....	.....	.....	.....	.....	.....
3.75 to 3.83.	6	43	.....	.....	6	43	.....	.....	.....	.....	.....	.....
3.84 to 3.91.	.....	1	.....	.....	.....	1	.....	.....	.....	.....	.....	.....
3.92 to 3.99.	.....	9	.....	.....	.....	9	.....	.....	.....	.....	.....	.....
4.00 to 4.08.	4	22	.....	.....	4	22	.....	.....	.....	.....	.....	.....
4.09 to 4.16.	.....	6	.....	.....	.....	6	.....	.....	.....	.....	.....	.....
4.17 to 4.24.	13	.....	.....	.....	13	.....	.....	.....	.....	.....	.....	.....
4.25 to 4.33.	.....	1	.....	.....	.....	1	.....	.....	.....	.....	.....	.....
4.34 to 4.41.	.....	1	.....	.....	.....	1	.....	.....	.....	.....	.....	.....
4.42 to 4.50.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
4.51 to 4.58.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
4.59 to 4.66.	12	.....	.....	.....	12	.....	.....	.....	.....	.....	.....	.....
4.67 to 4.75.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
4.76 to 4.83.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
4.84 to 4.91.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
5.00 to 5.08.	4	4	.....	.....	4	4	.....	.....	.....	.....	.....	.....
5.17 to 5.24.	12	.....	.....	.....	12	.....	.....	.....	.....	.....	.....	.....
5.34 to 5.41.	.....	1	.....	.....	.....	1	.....	.....	.....	.....	.....	.....
5.59 to 5.66.	.....	12	.....	.....	.....	12	.....	.....	.....	.....	.....	.....
6.00 to 6.08.	6	6	.....	.....	6	6	.....	.....	.....	.....	.....	.....
7.50 to 7.58.	3	3	.....	.....	3	3	.....	.....	.....	.....	.....	.....
8.00 to 8.08.	1	1	.....	.....	1	1	.....	.....	.....	.....	.....	.....
8.25 to 8.33.	.....	1	.....	.....	.....	1	.....	.....	.....	.....	.....	.....
9.00 to 9.08.	.....	1	.....	.....	.....	1	.....	.....	.....	.....	.....	.....
12.75 to 12.83.	.....	1	.....	.....	.....	1	.....	.....	.....	.....	.....	.....
13.34 to 13.41.	.....	2	.....	.....	.....	2	.....	.....	.....	.....	.....	.....
14.00 to 14.08.	1	1	.....	.....	1	1	.....	.....	.....	.....	.....	.....
15.00 to 15.08.	.....	1	.....	.....	.....	1	.....	.....	.....	.....	.....	.....
16.67 to 16.74.	.....	1	.....	.....	.....	1	.....	.....	.....	.....	.....	.....
Total and average	4,740	5,504	.....	46	4,740	5,550	\$1.847	\$1.962	.....	\$.80	\$1.847	\$1.952

Remarks.—This industry, one of the most important in the state, experienced a remarkable growth in the two years 1904 and 1905. There was an increase in the latter year of 9 per cent. in the total capital invested, all items of investment increasing from 6 to 11 per cent.; of 62 per cent. in the raw material used; of 15 per cent. in other materials used; of 26 per cent. in the number of employees; and of nearly 40 per cent. in the output. The average daily wages paid were about 6 per cent. higher in 1905. Employment was apparently somewhat irregular each year. But it is to be noted that the maximum of employment was in December, both in 1904 and in 1905; and that there was an increase from month to month, with but a few exceptions, beginning with January of 1904 and continuing up to December of 1905. This means that there was but very little unemployment in this industry, since a workman when once employed remained in the work. The great variety of occupations in this industry is noticeable. No women were employed in 1904, and but 46 in 1905. These all worked in subsidiary occupations. All worked 10 hours per day.

29. KNIT GOODS—17 ESTABLISHMENTS.

TABLE I—MANAGEMENT AND OPERATION.

Classification.	Number in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent.
Number of private firms.....				
Number of male partners.....				
Number of female partners.....				
Total number of partners.....				
Number of corporations.....	17	17		
Number of male stockholders.....	120	129	+ 9	7.50
Number of female stockholders.....	25	24	— 1	4.00
Total number of stockholders.....	145	153	+ 8	5.52
Total number of partners and stockholders.....	145	153	+ 8	5.52
Smallest number of persons employed.....	2,724	2,800	+ 76	2.79
Greatest number of persons employed.....	2,919	2,936	+ 17	0.58
Average number of persons employed.....	2,856	2,877	+ 21	0.74
Average days in operation.....	279	290	+ 11	3.94

TABLE II—INVESTMENT.

Classification.	Capital invested in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent.
Land	\$58,791 72	\$92,230 75	+ \$33,439 03	56.88
Buildings and fixtures	294,300 14	327,272 32	+ 32,972 18	11.20
Machinery, etc.	643,441 87	853,706 46	+ 210,264 59	32.63
Cash and other capital	1,383,610 45	1,093,142 37	— 290,468 08	20.99
Total	\$2,380,144 18	\$2,363,351 90	— \$13,792 28	0.58

TABLE III A—VALUE OF MATERIALS AND LABOR EMPLOYED, AND OF PRODUCT.

Classification.	Value of material used, wages and salaries paid in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Raw material used	\$1,745,937 23	\$1,856,545 91	+ \$110,608 68	6.31
Other material used	341,253 26	345,434 04	+ 4,180 78	1.23
Wages	850,760 18	893,434 55	+ 42,674 37	5.02
Salaries	168,426 99	171,184 48	+ 2,757 49	1.64
Profit and minor expenses....	396,003 90	412,439 58	+ 16,435 68	4.15
Goods made and work done.	\$3,502,381 56	\$3,679,038 56	+ \$176,657 00	5.04

TABLE III B—ANALYSIS OF TABLE III A.

Classification.	1904.	1905.
Value of goods made and work done (gross product)	\$3,502,381 56	\$3,679,038 56
Value of stock used and other material consumed in production	2,087,100 49	2,201,979 95
Industry product (gross production less value of stock and material)	1,415,191 07	1,477,058 61
Wages and salaries (Labors direct share of product)	1,019,187 17	1,064,619 03
Profit and minor expense fund (industry product less wages)	396,003 90	412,439 58
	Per cent.	Per cent.
Percentage of industry product paid in wages.....	72.02	72.08
Percentage of industry product devoted to profit and minor expenses	27.98	27.92

TABLE IV—AVERAGE CAPITAL ETC., PER EMPLOYEE.

Classification.	Average capital, product and yearly earnings in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent.
Average capital per employee.....	\$833 33	\$822 58	— \$10 80	1.30
Average product per employee.....	1,226 32	1,278 78	+ 52 46	4.28
Average yearly earnings	297 89	310 54	+ 12 65	4.25

TABLE V—RANGE OF EMPLOYMENT AND OF UNEMPLOYMENT.

Months	Total no. of persons employed in		Percentages of			
			Employment in		Unemployment in	
	1904.	1905.	1904.	1905.	1904.	1905.
January	2,724	2,800	93.32	95.37	6.68	4.63
February	2,815	2,834	96.44	96.53	3.56	3.47
March	2,911	2,867	99.73	97.65	0.27	2.35
April	2,919	2,927	100.—	99.69	0.00	0.31
May	2,877	2,936	98.56	100.—	1.44	0.00
June	2,859	2,916	97.95	99.32	2.05	0.68
July	2,865	2,921	98.15	99.49	1.85	0.51
August	2,883	2,915	98.77	99.28	1.23	0.72
September	2,846	2,879	97.50	98.06	2.50	1.94
October	2,904	2,852	99.49	97.14	0.51	2.86
November	2,855	2,854	97.81	97.21	2.19	2.79
December	2,817	2,823	96.51	96.15	3.49	3.85
Average	2,856	2,877	97.84	97.99	2.16	2.01

TABLE VI—OCCUPATIONS AND WAGES OF EMPLOYEES.

Occupations.	Total no. of persons.		Average hours per day.		Average wages per day.		Average wages per hour.		Increase, +, or decrease, - per day in 1905.		
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	Amt.	Per ct.	
Boarders	4	14	10	10	\$1.00	\$.673	\$.10	\$.067	—	\$.327	32.70
Box makers	14	15	10	10	1.711	1.688	.171	.169	—	.023	1.34
Box makers, female	4	7	10	10	.79	.783	.079	.078	—	.007	.89
Boys	2	8	10	10	.55	.706	.055	.071	+	.156	28.36
Carders	1	2	10	10	3.25	3.25	.325	.325			
Carders, female	8		10		.60		.06				
Carpenters	2	3	10	10	1.875	2.233	.188	.222	+	.348	15.65
Crocheters, female	100	150	10	10	.34	.294	.034	.029	—	.046	15.65
Cutters	3	5	10	10	1.733	1.366	.173	.137	—	.397	21.18
Cutters, female		1		10		.54		.054			
Dryers	45	9	10	10	1.005	.944	.101	.094	—	.061	6.07
Dyers	14	19	10	10	1.196	1.803	.120	.18	+	.607	50.75
Electricians	1		10		2.17		.217				
Engineers	8	8	10.50	10.50	2.226	2.201	.212	.21	—	.025	1.12
Fillers	1		10		2.00		.20				
Finishers, female	113	133	9.90	9.87	.658	.681	.066	.069	+	.023	3.49
Firemen	7	6	10	10	1.839	1.867	.184	.187	+	.028	1.52
Foremen	19	21	10	10	2.638	2.754	.264	.275	+	.116	4.40
Forewomen	4	6	10	10	1.233	1.238	.123	.124	+	.005	0.41
Helpers	125	115	10	10	.934	1.048	.093	.105	+	.114	12.21
Helpers, female	262	257	9.98	10	.74	.744	.074	.074	+	.004	.54
Inspectors	4		10		.60		.06				
Knitters	74	73	9.82	9.84	2.508	2.309	.257	.235	—	.199	7.93
Knitters, female	1,295	1,147	9.95	9.98	.941	.968	.095	.097	+	.027	2.87
Laborers	74	87	0.00	10	1.547	1.556	.157	.155	+	.006	.39
Laborers, female	69	31	10	10	.788	.871	.079	.087	+	.083	10.53
Laundrymen	1	1	16	10	2.00	2.00	.20	.20			
Loopers, female	2	27	10	10	1.25	.783	.125	.078	—	.467	37.36
Machine operators, female	40	61	10	10	1.10	1.041	.11	.104	—	.059	5.36
Machine tenders	3		10		1.50		.15				
Machine tenders, female	13	4	10	10	.644	.878	.064	.088	+	.234	36.34
Machinists	28	24	10	10	2.765	3.00	.277	.30	+	.235	8.50
Matchers, female	49	52	10	10	1.35	1.35	.135	.135			
Menders, female	33	72	10	10	1.405	1.088	.141	.109	—	.317	22.56
Millwrights	2	1	10	10	2.625	2.50	.263	.25	—	.125	4.76
Nappers	6	6	10	10	.875	.875	.088	.088			
Packers	22	13	9.95	9.91	1.572	1.642	.158	.163	+	.07	4.45
Packers, female	16	44	10	10	.696	.726	.070	.073	+	.03	4.31
Pickers	1		10		2.08		.208				
Piece workers		29		10		1.12		.112			
Piece workers, female		57		10		1.008		.101			
Porters	3	2	10	10	1.55	1.50	.155	.15	—	.05	3.23
Pressers	64	62	10	10	1.841	1.75	.184	.175	—	.091	4.94
Pressers, female	1	5	9	9.80	.75	.616	.083	.063	—	.134	17.87
Reelers, female	3		10		.607		.061				
Ribbers		4		10		.588		.059			
Ribbers, female		2		10		.55		.095			
Sewers, female	94	90	9.49	9.60	.793	.633	.084	.065	—	.160	20.18
Shipping clerks	8	3	10	10	1.644	1.75	.164	.175	+	.106	6.45
Singers	8	8	10	10	2.25	2.25	.225	.225			
Sorters	2	3	10	10	2.00	2.45	.20	.245	+	.45	22.50
Sorters, female	11	26	10	10	.651	.614	.065	.061	—	.037	5.68
Spinners	2	5	10	10	2.60	1.90	.26	.19	—	.70	26.92
Spinners, female	3	18	10	10	.82	.673	.082	.067	—	.147	17.93
Spoolers	1		9		1.67		.186				
Spoolers, female	52	45	9.92	9.91	.462	.552	.047	.056	+	.090	19.48
Stock mixers	1	1	10	10	2.50	2.50	.25	.25			
Sweepers	3	3	10	10	1.50	1.50	.15	.15			
Tappers	5		10		1.69		.169				
Tappers, female	90	90	10	10	1.512	1.497	.151	.15	—	.015	.99
Teamsters	1		10		2.00		.20				
Timekeepers	1	1	10	10	2.00	2.25	.20	.225	+	.25	12.50
Timekeepers, female	1		9		.87		.097				
Tufters, female	9	5	10	10	.80	1.00	.08	.10	+	.20	25.00
Twisters		2		10		.80		.08			
Twisters, female	9		10		.568		.059				
Washers	1		10		1.83		.183				
Watchmen	6	6	11.50	11.17	1.453	1.493	.126	.134	+	.04	2.75
Winders	4	4	10	10	1.803	1.813	.18	.181	+	.01	.55
Winders, female	8	28	10	9.96	.70	.563	.07	.067	—	.137	19.57
Yarn men	1		10		2.00		.20				
Total and av	2,857	2,921	9.95	9.97	\$1.041	\$1.035	\$.105	\$.104	—	\$.006	.58

TABLE VII—CLASSIFICATION OF DAILY WAGES.

Classified daily wages, (inclusive).	Total number of persons employed.						Average wages per day.					
	Male.		Female.		Total.		Male.		Female.		Total.	
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.
\$.33 and under			9	54	9	54			\$.294	\$.209	\$.294	\$.209
.34 to \$.41			130	121	130	121			.347	.348	.347	.348
.42 to .49		1	52	26	52	27		\$.42	.44	.436	.44	.431
.50 to .58	22	14	258	307	280	321	\$.541	.51	.524	.508	.525	.511
.59 to .63	12	3	130	178	192	181	.62	.60	.616	.617	.616	.617
.67 to .74	17	7	111	179	128	186	.67	.683	.688	.687	.686	.687
.75 to .83	61	52	408	346	472	398	.776	.752	.775	.787	.775	.782
.84 to .91	7	2	134	105	141	107	.369	.85	.871	.882	.871	.881
.92 to .99				19	29	19			.942	.925	.942	.925
1.00 to 1.08	29	43	486	407	515	450	1.003	1.005	1.004	1.004	1.004	1.004
1.09 to 1.16	6	30	82	116	88	146	1.108	1.121	1.113	1.125	1.113	1.124
1.17 to 1.24	12		53	19	65	19	1.17		1.199	1.17	1.194	1.17
1.25 to 1.33	35	53	146	101	181	249	1.261	1.26	1.29	1.263	1.284	1.263
1.34 to 1.41	9	9	65	112	74	121	1.363	1.367	1.362	1.354	1.362	1.355
1.42 to 1.49	1		10		11		1.42		1.423		1.423	
1.50 to 1.58	95	83	43	63	138	151	1.50	1.50	1.519	1.501	1.506	1.501
1.59 to 1.66	4	16	25	34	29	50	1.638	1.634	1.606	1.65	1.61	1.645
1.67 to 1.74	20	8		2	20	10	1.673	1.675		1.67	1.673	1.674
1.75 to 1.83	32	34	40	33	72	127	1.766	1.754	1.76	1.752	1.763	1.753
1.84 to 1.91	33	1	9		72	1	1.88	1.87	1.87		1.879	1.87
2.00 to 2.08	24	25	11	13	35	38	2.003	2.004	2.011	2.00	2.006	2.003
2.09 to 2.16	3		10		13		2.10		2.128		2.122	
2.17 to 2.24	6	1			6	1	2.19	2.17			2.19	2.17
2.25 to 2.33	19	32	1	19	20	51	2.252	2.253	2.25	2.25	2.252	2.252
2.34 to 2.41		1				1		2.35				2.35
2.42 to 2.49	6		3		9		2.45		2.46		2.453	
2.50 to 2.58	16	16		3	16	19	2.50	2.50		2.50	2.50	2.50
2.59 to 2.66		1	3		3	1		2.66		2.60		2.60
2.67 to 2.74	2	1			2	1	2.67	2.67			2.67	2.67
2.75 to 2.83	7	3			7	3	2.73	2.75			2.73	2.75
2.92 to 2.99		1				1		2.92				2.92
3.00 to 3.08	20	23	1	1	21	29	3.004	3.00	3.00	3.00	3.004	3.00
3.09 to 3.16		1				1		3.16				3.16
3.17 to 3.24	1	1			1	1	3.17	3.17			3.17	3.17
3.25 to 3.33	9	7			9	7	3.294	3.273			3.294	3.273
3.50 to 3.58	13	4			13	4	3.50	3.50			3.50	3.50
3.67 to 3.74		1				1		3.67				3.67
4.00 to 4.08	6	5			6	5	4.00	4.00			4.00	4.00
4.50 to 4.58	8	7			8	7	4.50	4.50			4.50	4.50
4.75 to 4.83		2				2		4.75				4.75
Total and av.	563	563	2,289	2,358	2,877	2,921	\$1.656	\$1.653	\$.889	\$.887	\$1.041	\$1.065

Remarks.—The tables show a moderate growth of this industry for the years 1904 and 1905. The industry became more permanently established, as is evidenced by the increase of 57 per cent. in the portion of the capital invested that was devoted to land, of 11 per cent. in the amount invested in buildings, and of 33 per cent. in that invested in machinery. There was an increase also of from 5 to 6 per cent. in the materials used, the total wages paid, and the output. The number of days of

operation was 4 per cent. greater in 1905, and largely in consequence of this there was an increase of 4 per cent. in the average yearly earnings of employees. Labor's share of the industry product was large each year—72 per cent. Employment was very uniform. This industry is one carried on largely by the labor of women and children, $\frac{4}{5}$ of the total number of employees being females. Consequently more women than men were employed in the majority of those occupations peculiar to the industry. The average hours of labor for both men and women were slightly less than 10 per day.

30. LEATHER—23 ESTABLISHMENTS.

TABLE I—MANAGEMENT AND OPERATION.

Classification.	Number in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent.
Number of private firms	2	2		
Number of male partners	4	4		
Number of female partners				
Total number of partners	4	4		
Number of corporations	21	21		
Number of male stockholders	4,808	1,341	— 3,467	72.11
Number of female stockholders	1,657	244	— 1,413	85.27
Total number of stockholders	6,465	1,585	— 4,880	75.48
Total number of partners and stockholders	6,469	1,589	— 4,880	75.44
Smallest number of persons employed	3,808	4,491	+ 683	17.94
Greatest number of persons employed	4,069	4,967	+ 898	22.07
Average number of persons employed	3,944	4,688	+ 724	18.36
Average days in operation	304	315	+ 11	3.62

TABLE II—INVESTMENT.

Classification.	Capital invested in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Land	\$960,192 68	\$960,834 88	+ \$642 20	0.07
Buildings and fixtures	1,713,690 82	1,847,823 43	+ 134,132 61	7.83
Machinery, etc.	1,437,904 60	1,464,697 73	+ 6,793 12	0.47
Cash and other capital	7,549,254 07	9,042,981 08	+ 1,493,727 01	19.79
Total	\$11,681,042 17	\$13,316,337 11	+\$1,635,294 94	14.00

TABLE III A—VALUE OF MATERIALS AND LABOR EMPLOYED, AND OF PRODUCT.

Classification.	Value of material used, wages, and salaries paid in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent.
Raw material used	\$11,143,452 43	\$15,887,932 35	+ \$4,744,479 92	40.66
Other material used	1,752,204 64	2,223,477 31	+ 471,272 67	26.90
Wages	1,899,671 16	2,206,254 74	+ 306,583 58	16.14
Salaries	279,974 89	295,064 24	+ 15,089 35	5.39
Profit and minor expenses ...	2,118,192 62	2,328,811 57	+ 210,618 95	9.94
Goods made and work done .	17,193,495 74	22,941,540 21	+ 5,748,044 47	33.43

TABLE III B—ANALYSIS OF TABLE III A.

Classification.	1904.	1905.
Value of goods made and work done (gross product)	\$17,193,495 74	\$22,941,540 21
Value of stock used and other material consumed in production	12,895,657 07	18,111,409 66
Industry product (gross production less value of stock and material)	4,297,838 67	4,830,130 55
Wages and salaries (Labor's direct share of product)	2,118,192 62	2,328,811 57
Profit and minor expense fund (industry product less wages)	2,118,192 62	2,328,811 57
	Per cent.	Per cent.
Percentage of industry product paid in wages	50.71	51.79
Percentage of industry product devoted to profit and minor expenses	49.29	48.21

TABLE IV—AVERAGE CAPITAL, ETC., PER EMPLOYEE.

Classification.	Average capital, product and yearly earnings in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent.
Average capital per employee	\$2,961 72	\$2,850 50	— \$111 22	3.76
Average product per employee	4,359 41	4,914 64	+ 555 23	12.74
Average yearly earnings	481 66	472 36	— 9 30	1.93

TABLE V—RANGE OF EMPLOYMENT AND OF UNEMPLOYMENT.

Months.	Total no. of persons employed in		Percentages of			
			Employment in		Unemployment in	
	1904.	1905.	1904.	1905.	1904.	1905.
January	4,039	4,491	99.19	90.42	0.81	9.58
February	4,046	4,586	99.44	92.33	0.56	7.67
March	3,925	4,558	96.46	91.77	3.54	8.23
April	3,937	4,579	96.76	92.19	3.24	7.81
May	3,931	4,503	96.61	90.66	3.39	9.34
June	3,893	4,656	95.67	93.74	4.33	6.26
July	3,968	4,687	97.52	94.36	2.48	5.64
August	3,964	4,640	97.42	93.42	2.58	6.58
September	3,822	4,686	93.93	94.34	6.07	5.66
October	3,808	4,782	93.59	96.28	6.41	3.72
November	3,930	4,884	96.58	98.33	3.42	1.67
December	4,069	4,967	100.—	100.—	.....	.....
Average	3,944	4,668	96.93	93.98	3.07	6.02

TABLE VI—OCCUPATIONS AND WAGES OF EMPLOYEES.

Occupations.	Total no. of persons.		Average hours per day.		Average wages per day.		Average wages per hour.		Increase, +, or decrease, —, per day in 1905.	
	1904	1905.	1904.	1905.	1904.	1905.	1904.	1905.	Amt. Per et.	
									Amt.	Per et.
Apprentices		2	10			\$.83		\$.083		
Back grinders	1	1	10	10	\$1.75	1.75	\$.175	.175		
Beamsters	32	30	10	10	1.913	1.783	.101	.178	— .13	6.80
Beamsters' helpers	5		10		1.50		.150			
Blackers	9	12	10	10	1.789	1.769	.189	.177	— .02	1.12
Blacksmiths	3	5	10	10	2.063	1.99	.208	.199	— .093	4.41
Blacksmiths' helpers	2		10		1.50		.150			
Boys	6	4	10	10	.86	.887	.086	.089	+ .027	3.14
Carpenters	34	55	10	10	2.307	2.338	.231	.234	+ .036	1.34
Chrome men	3	5	10	10	1.83	1.602	.183	.160	— .228	12.46
Combers		2		10		1.67		.167		
Coppersmiths	4	5	10	10	2.165	2.15	.217	.215	— .01	.40
Coppersmiths' helpers	1		10		1.53		.153			
Curriers	1,261	1,631	10	10	1.812	1.868	.181	.187	+ .056	3.09
Curriers, female	115	164	10	10	1.053	.87	.106	.087	— .188	17.77
Curriers' helpers	328	293	10	10	1.384	1.529	.138	.153	+ .145	10.43
Cutters, female		6		10		.863		.086		
Dampers	6	6	9	10	1.67	1.67	.167	.167		
Dyers	1	1	10	10	2.83	3.00	.283	.30	+ .17	6.00
Dyers' helpers		1		10		2.00		.200		
Electricians	2	2	10	10	1.67	1.79	.167	.179	+ .12	7.18
Elevator men		2		10		1.25		.125		
Engineers	15	20	9.93	10	2.846	2.474	.287	.247	— .372	13.07
Engineers' helpers	5	8	10.80	10.75	1.99	2.082	.184	.194	+ .092	4.62
Finishers	100	120	10	10	1.531	1.748	.153	.175	+ .217	14.17
Finishers, female		17		10		.91		.091		
Finishers' helpers	16	10	10	10	1.016	1.01	.102	.101	— .006	.59
Finishers' helpers, female	8	14	10	10	.725	.665	.073	.067	— .06	8.28
Firemen	34	33	10.91	10.79	1.815	1.897	.166	.176	+ .082	4.52

TABLE VI—OCCUPATIONS AND WAGES OF EMPLOYEES.—Continued.

Occupations.	Total no of persons.		Average hours per day.		Average wages per day.		Average wages per hour.		Increase, +, or decrease, —, per day in 1915.		
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	Amt.	Per ct.	
	Fleishers	3	3	10	10	2.026	2.056	.203	.206	+	.03	1.43
Floor workers	3	3	10	10	1.306	1.50	.131	.150	—	.194	14.85
Foremen	7	8	9.71	10	2.854	2.903	.294	.290	+	.049	1.72
Forewomen	3	1	9.33	.....	1.306	.....	.140	.....	.....	.....	.....
Fur sewers, female..	1	1	8	8	1.25	1.33	.146	.106	+	.08	6.40
Helpers	35	57	9.89	10	1.309	1.042	.132	.104	—	.264	20.21
Helpers, female	4	2	.....	10	.....	.812	.....	.081	.....	.....	.....
Hide trimmers	1	2	10	10	1.85	1.65	.185	.165	—	.20	10.81
Laborers	1,106	972	9.99	10	1.515	1.57	.157	.157	+	.050	3.63
Lime handlers	4	5	10	10	1.75	1.75	.175	.175	.....	.....	.....
Machinists	13	15	10	10	2.56	2.433	.256	.243	—	.127	4.96
Machinists' helpers ..	3	.....	10	.....	1.667	.....	.167	.....	.....	.....	.....
Machine operators ...	23	32	10	10	1.87	1.855	.187	.185	—	.015	.803
Masons	5	9	10	10	2.47	2.416	.247	.242	—	.054	2.19
Masons' helpers	1	.....	10	.....	1.58	.....	.158	.....	.....	.....	.....
Mill men .....	.....	1	.....	10	.....	1.33	.....	.133	.....	.....	.....
Oilers	7	6	10	10	1.728	1.335	.173	.134	+	.107	6.19
Packers	1	5	10	10	2.00	1.358	.200	.136	—	.642	32.10
Painters	4	5	10	10	1.605	1.55	.161	.155	—	.045	2.80
Piece workers, female	141	165	9	10	.811	.829	.09	.083	+	.013	2.22.
Plumbers .....	.....	1	.....	10	.....	4.00	.....	.400	.....	.....	.....
Pressers, female	6	7	9	10	1.00	1.00	.111	.10	.....	.....	.....
Scourers	1	1	10	10	1.85	1.75	.185	.175	—	.10	5.40
Setters	44	53	10	10	1.83	1.927	.183	.193	—	.203	1.11
Shavers	15	23	9.60	9.70	2.934	2.843	.306	.294	—	.086	2.93
Shippers	6	1	10	10	1.567	2.13	.157	.213	+	.553	35.93
Shipping clerks	1	1	10	10	2.00	2.30	.200	.230	+	.30	15.
Sorters	12	12	9.83	10	2.237	2.218	.223	.222	—	.019	.85
Sorters, female .....	.....	1	.....	10	.....	1.33	.....	.133	.....	.....	.....
Sorters' helpers	1	.....	9	.....	.75	.....	.083	.....	.....	.....	.....
Splitters	3	3	9.33	9.67	3.173	3.116	.34	.322	—	.057	1.80
Stakers	3	3	10	10	1.39	1.33	.139	.133	+	.44	31.65
Steam fitters	7	9	10	10	2.035	1.981	.204	.198	—	.054	2.65
Steam fitters' helpers	3	.....	10	.....	1.50	.....	.150	.....	.....	.....	.....
Stuffers	1	1	10	10	2.06	2.06	.206	.208	+	.02	.97
Tanners	506	807	10	10	1.725	1.633	.173	.163	—	.092	5.33
Teamsters	33	53	10	10	1.767	1.652	.177	.165	—	.115	6.50
Veneers, female	13	.....	9	.....	.853	.....	.095	.....	.....	.....	.....
Watchmen	20	22	11.05	10.77	1.708	1.66	.155	.154	—	.048	2.87
Whiteners	21	24	9.86	9.38	2.149	2.195	.218	.222	+	.046	2.14
Yardmen	15	5	10	10	1.60	1.768	.160	.176	+	.168	10.50
Total and av.	4,008	4,824	10.01	10.22	\$1.627	\$1.647	\$.162	\$.161	+	\$.0	.....

TABLE VII—CLASSIFICATION OF DAILY WAGES.

Classified daily wages, (inclusive).	Total number of persons employed.						Average wages per day.					
	Male.		Female.		Total.		Male.		Female.		Total.	
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.
\$.42 to \$.49..			13	6	13	6			\$.45	\$.445	\$.45	\$.445
.50 to .58..	15	13	23	37	38	50	.548	.549	.551	.459	.55	.549
.59 to .66..	2	2	12	13	14	15	.60	.60	.653	.631	.646	.627
.67 to .74..	11	4	7	44	18	48	.678	.685	.67	.677	.675	.679
.75 to .83..	44	50	51	54	95	104	.793	.781	.777	.791	.784	.786
.84 to .91..	2	10	31	53	33	63	.875	.865	.869	.871	.87	.87
.92 to .99..	9	12	31	40	40	52	.93	.925	.955	.934	.95	.937
1.00 to 1.08..	89	82	62	125	151	209	1.007	1.028	1.01	1.007	1.006	1.003
1.09 to 1.16..	25	14			2	25	1.16	1.133	1.131		1.10	1.133
1.17 to 1.24..	25	35	1		26	35	1.186	1.179	1.17		1.18	1.179
1.25 to 1.33..	227	255	44	3	271	258	1.239	1.286	1.25	1.303	1.283	1.286
1.34 to 1.41..	129	106			129	106	1.372	1.372			1.372	1.372
1.42 to 1.49..	244	176		1	244	177	1.442	1.435		1.42	1.442	1.435
1.50 to 1.58..	1,017	1,299	11		1,028	1,299	1.502	1.52	1.50		1.518	1.52
1.59 to 1.66..	145	265			145	265	1.614	1.62			1.614	1.62
1.67 to 1.74..	278	251	1	1	279	252	1.671	1.671	1.67	1.67	1.671	1.671
1.75 to 1.83..	510	630			510	630	1.769	1.769			1.769	1.769
1.84 to 1.91..	23	67			23	67	1.869	1.885			1.869	1.885
1.92 to 1.99..	259	155			259	155	1.920	1.920			1.920	1.920
2.00 to 2.08..	358	404			358	404	2.001	2.004			2.001	2.004
2.09 to 2.16..	5	17			5	17	2.11	2.123			2.11	2.123
2.17 to 2.24..	68	69			68	69	2.175	2.179			2.175	2.179
2.25 to 2.33..	85	203			85	203	2.268	2.284			2.268	2.284
2.34 to 2.41..		11				11		2.397				2.397
2.42 to 2.49..	19	2			19	2	2.421	2.42			2.421	2.42
2.50 to 2.58..	105	77			105	77	2.510	2.501			2.510	2.501
2.59 to 2.66..	3	18			3	18	2.633	2.611			2.633	2.611
2.67 to 2.74..	15	8			15	8	2.67	2.674			2.67	2.674
2.75 to 2.83..	18	31			18	31	2.772	2.753			2.772	2.753
2.84 to 2.91..	1	3			1	3	2.91	2.90			2.91	2.90
3.00 to 3.08..	30	102			30	102	3.003	3.00			3.003	3.00
3.17 to 3.24..	4	1			4	1	3.17	3.17			3.17	3.17
3.25 to 3.33..	6	1			6	1	3.293	3.27			3.293	3.27
3.50 to 3.58..	6	3			6	3	3.50	3.50			3.50	3.50
3.84 to 3.91..	2	3			2	3	3.85	3.85			3.85	3.85
4.00 to 4.08..	1	5			1	5	4.00	4.00			4.00	4.00
4.50 to 4.58..		1				1		4.50				4.50
5.00 to 5.08..	1				1			5.00				5.00
Total and av.	3,781	4,445	287	379	4,068	4,824	\$1.68	\$1.715	\$.92	\$.85	\$1.627	\$1.647

Remarks.—This industry, one of the most important in the state, and one in which Wisconsin ranked third among all the states in 1900, made a very substantial advance in the two years 1904 and 1905. In the latter year there was an increase of 14 per cent in the capital invested, of 18 per cent. in the average number of persons employed, of 41 per cent. in the raw material used, of 16 per cent. in the total wages paid, and of 33 per cent. in the output. Employment was very regular each year, there being in general a steady increase in the number of employees. About 7 per cent. of the employees in 1904 were women, and

about 8 per cent. in 1905. They were employed, with but few exceptions, in occupations peculiar to the industry. Their average daily wages were considerably lower in 1905 than in the preceding year. Their hours of labor on the contrary were somewhat longer, although still slightly less than 10 per day.

31. LIME AND CEMENT—19 ESTABLISHMENTS.

TABLE I—MANAGEMENT AND OPERATION.

Classification.	Number in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent.
Number of private firms	2	2		
Number of male partners	3	3		
Number of female partners				
Total number of partners	3	3		
Total number of corporations	17	17		
Number of male stockholders	119	127	+ 8	6.72
Number of female stockholders	64	63	— 1	1.56
Total number of stockholders	183	190	+ 7	3.83
Total number of partners and stockholders	186	193	+ 7	3.76
Smallest number of persons employed	290	303	+ 13	4.48
Greatest number of persons employed	691	648	— 43	6.22
Average number of persons employed	543	528	— 15	2.76
Average days in operation	297	314	+ 17	5.72

TABLE II—INVESTMENT.

Classification.	Capital invested in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent.
Land	\$663,200 51	\$742,570 82	+ \$79,370 31	11.97
Buildings and fixtures	397,594 32	473,112 96	+ 75,518 64	18.99
Machinery, etc.,	209,918 08	225,332 14	+ 15,414 06	7.34
Cash and other capital	306,677 97	257,767 75	— 48,910 22	15.30
Total	\$1,577,390 88	\$1,698,783 67	+ \$121,392 79	7.70

TABLE III A—VALUE OF MATERIALS AND LABOR EMPLOYED, AND OF PRODUCT.

Classification.	Value of material used, wages and salaries paid in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Raw material used	\$301,994 23	\$339,529 58	+ \$37,535 35	12.43
Other material used	33,231 42	35,907 03	+ 2,675 61	8.05
Wages	246,955 97	248,187 84	+ 1,231 87	0.50
Salaries	36,897 92	36,325 92	— 572 00	1.55
Profit and minor expenses...	108,356 00	103,098 82	— 5,257 18	4.85
Goods made and work done..	\$727,435 54	\$763,049 19	+ \$35,613 65	4.89

TABLE III B—ANALYSIS OF TABLE III A.

Classification.	1904.	1905.
Goods made and work done (gross production)	\$727,435 54	\$763,049 19
Value of stock used and material consumed in production	335,225 65	375,436 61
Industry product (gross production less value of stock and material)	392,209 89	387,612 58
Wages and salaries (Labor's direct share of product)	283,853 89	284,513 76
Profit and minor expense fund (industry product less wages)	108,356 00	103,098 82
Percentage of industry product paid in wages.....	Per cent. 72.33	Per cent. 73.43
Percentage of industry product devoted to profit and minor expenses	27.64	26.57

TABLE IV—AVERAGE CAPITAL, ETC., PER EMPLOYEE.

Classification.	Average capital, product and yearly earnings in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent.
Average capital per employee.....	\$2,904 96	\$3,217 39	+ \$312 42	10.75
Average product per employee.....	1,339 66	1,445 17	+ 105 51	7.88
Average yearly earnings	454 80	470 05	+ 15 25	3.35

TABLE V—RANGE OF EMPLOYMENT AND OF UNEMPLOYMENT.

Months.	Total no. of persons employed in		Percentages of			
			Employment in		Unemployment in	
	1904.	1905.	1904.	1905.	1904.	1905.
January	302	303	43.70	46.76	56.30	53.24
February	290	321	41.97	49.54	58.03	50.46
March	373	493	53.93	76.08	46.02	23.92
April	560	597	81.04	92.13	18.96	7.87
May	656	648	94.93	100.—	5.07	0.00
June	672	638	97.37	98.46	2.63	1.54
July	691	632	100.—	97.53	0.00	2.47
August	685	625	99.13	96.45	0.87	3.55
September	667	640	96.53	98.77	3.47	1.23
October	652	626	94.35	96.60	5.65	3.40
November	595	441	86.10	68.05	13.90	31.95
December	371	371	58.69	67.25	46.31	42.75
Average	543	528	78.58	81.48	21.42	18.52

TABLE VI—OCCUPATIONS AND WAGES OF EMPLOYEES.

Occupations.	Total no. of persons.		Average hours per day.		Average wages per day.		Average wages, per hour.		Increase, +, or decrease, per day in 1905.		
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	Amt. Per ct.		
									Amt.	Per ct.	
Blacksmiths	5	2 10	10		\$1.73	\$1.025	\$.173	\$.163	—	\$.105	6.07
Brickmakers	29	10			1.366		.137				
Burners	37	31 10.49	10.65		1.804	1.893	.172	.170	+	.004	.22
Carpenters	2	1 10	10		1.75	1.50	.175	.15	—	.25	14.28
Coopers	2	2 10	10		1.875	2.00	.186	.20	+	.125	6.66
Crushers	1	10			1.90		.19				
Drillers	15	10			1.767		.177				
Engineers	9	6 10	10		2.111	1.975	.211	.198	—	.186	6.44
Firemen	87	7 10.76	11.71		1.654	1.739	.154	.148	+	.032	4.96
Foremen	5	7 10.40	10		1.93	1.833	.186	.188	—	.047	2.43
Girls	2	2 10	10		.50	.50	.05	.05			
Helpers	3	2 10	9		1.00	1.50	.10	.167	+	.50	50
Hoisters	1	10			1.90		.19				
Laborers	200	440 10	10		1.514	1.73	.151	.173	+	.216	14.26
Machine operators...	1	1 10	10		2.00	1.75	.20	.175	—	.25	12.5
Masons	2	8 10	10		3.00	3.375	.30	.338	+	.375	12.5
Messengers	1	7	10		1.00		.10				
Millers	2	2 10	10		1.925	1.925	.193	.193			
Miners	1	10			2.50		.25				
Mixers	1	1	10		2.50		.25				
Office girls	1	1 10	10		.75	.75	.075	.075			
Quarrymen	244	109 10	9.93		1.499	1.538	.15	.155	+	.039	2.60
Stoncutters	4	10			1.60		.16				
Teamsters	45	21 10	10		1.685	1.826	.169	.183	+	.141	8.37
Watchmen	1	1 12	12		1.33	1.33	.111	.110			
Weighers	2	2	10		1.75		.175				
Total and average..	649	653	10.12	10.00	\$1.568	\$1.717	\$.155	\$.171	+	\$.149	9.50

TABLE VII—CLASSIFICATION OF DAILY WAGES.

Classified daily wages, (inclusive).	Total number of persons employed.						Average wages per day.					
	Male.		Female.		Total.		Male.		Female.		Total.	
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.
\$.50 to \$.58.	12	5	2	2	14	7	\$.50	\$.50	\$.50	\$.50	\$.50	\$.50
.75 to .83.	.....	.....	1	1	1	1	.....	.....	.75	.75	.75	.75
1.00 to 1.08.	3	8	.....	.....	3	8	1.00	1.00	.....	.....	1.00	1.00
1.09 to 1.16.	10	6	.....	.....	10	6	1.13	1.142	.....	.....	1.13	1.142
1.17 to 1.24.	3	2	.....	.....	3	2	1.20	1.20	.....	.....	1.20	1.20
1.25 to 1.33.	15	2	.....	.....	15	2	1.273	1.33	.....	.....	1.273	1.33
1.34 to 1.41.	11	7	.....	.....	11	7	1.392	1.379	.....	.....	1.392	1.379
1.50 to 1.58.	317	158	.....	.....	317	158	1.50	1.50	.....	.....	1.50	1.50
1.59 to 1.66.	196	78	.....	.....	196	78	1.634	1.62	.....	.....	1.634	1.62
1.67 to 1.74.	6	26	.....	.....	6	26	1.697	1.70	.....	.....	1.697	1.70
1.75 to 1.83.	63	231	.....	.....	66	231	1.756	1.75	.....	.....	1.756	1.75
1.84 to 1.91.	35	21	.....	.....	35	21	1.857	1.852	.....	.....	1.857	1.852
1.92 to 1.99.	.....	4	.....	.....	4	4	.....	1.92	.....	.....	.....	1.92
2.00 to 2.08.	14	51	.....	.....	14	51	2.00	2.00	.....	.....	2.00	2.00
2.09 to 2.16.	.....	1	.....	.....	1	1	.....	2.10	.....	.....	.....	2.10
2.25 to 2.33.	1	29	.....	.....	1	29	2.25	2.25	.....	.....	2.25	2.25
2.34 to 2.41.	1	1	.....	.....	1	1	2.35	2.35	.....	.....	2.35	2.35
2.50 to 2.58.	8	12	.....	.....	3	12	2.50	2.50	.....	.....	2.50	2.50
3.00 to 3.08.	2	2	.....	.....	2	2	3.00	3.00	.....	.....	3.00	3.00
3.50 to 3.58.	1	6	.....	.....	1	6	3.50	3.50	.....	.....	3.50	3.50
Total and average	696	650	3	3	699	653	\$1.573	\$1.727	\$.583	\$.583	\$1.563	\$1.717

Remarks.—Although 3 per cent. fewer persons were employed in 1905 than in 1904, this industry, shows a considerable gain for the later year. There was an increase of 12 per cent. in the capital invested in land, of 19 per cent in that invested in buildings, and of 7 per cent. in the sum invested in machinery,—an indication of the more permanent establishment of the industry. There was also an increase of 11 per cent. in the material used, and of 5 per cent. in the output. Labor's share of the industry product was large each year—72 per cent. in 1904 and 73 per cent. in 1905. The average yearly earnings of employees were 3 per cent. greater in the latter year. Employment was very irregular, especially in 1904, when in February a maximum of 58 per cent. of unemployment was reached. This was due to the nature of the industry, which can be carried on only at a disadvantage during the winter months. Only three women were employed in this industry. These worked in minor employments, chiefly as office help. Their hours of labor were uniformly 10 per day; their wages were considerably lower than the average for female employees in all industries.

32. LUMBER—69 ESTABLISHMENTS.

TABLE I—MANAGEMENT AND OPERATION.

Classification.	Number in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount	Per cent
Number of private firms.....	19	19		
Number of male partners.....	26	24	— 2	7.69
Number of female partners.....	1	1		
Total number of partners.....	27	25	— 2	7.41
Number of corporations.....	50	50		
Number of male stockholders.....	350	363	+ 13	3.71
Number of female stockholders.....	78	91	+ 13	16.67
Total number of stockholders.....	428	454	+ 26	6.07
Total number of partners and stockholders.....	455	479	+ 24	5.27
Smallest number of persons employed.....	7,931	8,204	+ 273	3.44
Greatest number of persons employed.....	10,526	10,229	— 297	2.82
Average number of persons employed.....	9,399	9,436	+ 37	0.39
Average days in operation.....	340	303	— 37	10.88

TABLE II—INVESTMENT.

Classification.	Capital invested in		Increase, +, or decrease, —, in 1905	
	1904.	1905.	Amount.	Per cent
Land.....	\$6,129,155 94	\$6,140,549 52	+ \$11,393 58	0.19
Buildings and fixtures.....	1,902,637 42	1,916,902 55	+ 14,265 13	0.75
Machinery, etc.....	2,108,408 57	2,194,247 59	+ 85,839 01	4.07
Cash and other capital.....	11,173,585 27	11,434,342 81	+ 260 757 04	2.33
Total.....	\$21,313,817 20	\$21,686,041 96	+ 372,224 76	1.75

TABLE III A—VALUE OF MATERIALS AND LABOR EMPLOYED, AND OF PRODUCT.

Classification.	Value of material used, wages and salaries paid in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Raw material used.....	\$9,537,957 73	\$9,901,705 37	+ \$363,747 64	3.81
Other material used.....	522,272 06	677,115 73	+ 154,843 67	29.65
Wages.....	4,978 331 21	4,632,134 44	— 346,196 77	6.95
Salaries.....	613,129 60	625,746 73	+ 12,617 13	2.06
Profit and minor expenses....	4,313,497 77	4,143,736 73	— 169,761 04	3.93
Goods made and work done..	\$19,965,188 37	\$19,980,489 05	+ \$15,300 68	0.08

TABLE III B—ANALYSIS OF TABLE III A.

Classification.	1904.	1905.
Value of goods made and work done (gross product)	\$19,965,188 37	\$19,960,489 05
Value of stock used and material consumed in production	10,060,229 79	10,578,821 10
Industry product (gross production less value of stock and material)	9,904,958 58	9,401,667 95
Wages and salaries (Labor's direct share of product)	5,591,460 81	5,257,881 17
Profit and minor expense fund (industry product less wages)	4,313,497 77	4,143,786 78
	Per cent.	Per cent.
Percentage of industry product paid in wages.....	56.55	55.93
Percentage of industry product devoted to profit and minor expenses	43.45	44.07

TABLE IV—AVERAGE CAPITAL, ETC., PER EMPLOYEE.

Classification.	Average capital, product and yearly earnings in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent.
Average capital per employee.....	\$2,267 67	\$2,298 22	+ \$30 55	1.35
Average product per employee	2,124 18	2,117 47	— 6 71	0.32
Average yearly earnings	529 67	490 90	— 38 77	7.32

TABLE V—RANGE OF EMPLOYMENT AND OF UNEMPLOYMENT.

Months.	Total no. of persons employed in		Percentages of			
	1904.	1905.	Employment in		Unemployment in	
			1904.	1905.	1904.	1905.
January	8,663	8,821	89.30	86.23	17.70	13.77
February	8,514	8,729	80.88	85.33	19.12	14.67
March	8,168	8,801	77.60	86.04	22.40	13.96
April	7,931	8,735	75.35	85.39	24.65	14.61
May	9,626	9,905	91.45	96.83	8.55	3.17
June	10,526	9,896	100.—	96.74	0.00	3.26
July	10,030	9,979	95.29	97.56	4.71	2.44
August	10,139	10,114	96.32	98.87	3.68	1.13
September	10,172	9,946	96.63	97.23	3.37	2.77
October	10,462	10,229	99.39	100.—	0.61	0.00
November	10,058	9,855	95.55	93.34	4.45	3.66
December	8,496	8,204	80.71	80.20	19.29	19.80
Average	9,399	9,436	89.29	92.25	10.71	7.75

TABLE VI—OCCUPATIONS AND WAGES OF EMPLOYEES.

Occupations.	Total no. of persons.		Average hours per day.		Average wages per day.		Average wages per hour.		Increase, +, or decrease, —, per day in 1905.		
	1904.	1905.	1904	1905.	1904.	1905	1904.	1905.	Amt. Per ct.		
									Amt.	Per ct.	
Barnmen	8	15	10.50	10.53	\$1.739	\$1.843	\$.166	\$.175	+	\$.104	5.98
Blacksmiths	30	49	10.43	10.20	2.406	2.450	.231	.240	+	.044	1.83
Blacksmiths' helpers.	6	3	10.73	10.00	1.673	2.000	.156	.200	+	.327	19.56
Boilers	19	26	10.00	10.00	2.053	1.988	.205	.199	-	.065	3.16
Bookkeepers, female.		1		10.00		1.500		.150			
Boommen	83	60	10.00	10.00	1.910	1.767	.192	.177	-	.150	7.82
Boys	72	138	10.08	10.00	.978	1.06	.098	.106	+	.082	8.41
Brakemen	5	11	10.00	10.18	1.996	1.955	.200	.192	-	.041	2.05
Bundlers	5	7	10.00	10.00	1.606	1.633	.161	.168	+	.077	4.79
Cabinet makers		12		10.00		2.01		.201			
Car builders	9	3	10.00	10.00	2.167	2.033	.217	.208	-	.085	3.88
Carpenters	86	75	9.65	9.23	2.228	2.358	.231	.255	+	.130	5.83
Chain men	40	53	10.00	10.00	1.719	1.876	.172	.168	-	.043	2.50
Clearers	23	5	10.00	10.00	1.750	1.60	.175	.180	+	.050	2.85
Clerks, female	4	1	10.00	10.00	1.173	1.60	.117	.160	+	.427	36.40
Clippers	5	7	10.00	10.00	1.85	1.67	.185	.161	-	.243	13.14
Conductors	2		10.00		2.75		.275				
Conveyors	4		10.00		1.563		.156				
Cooks	51	44	10.71	10.63	2.904	2.191	.271	.206	-	.713	24.55
Cooks, female	1	2	12.00	11.00	1.730	1.415	.144	.139	-	.315	18.59
Deck men	8	46	10.00	10.02	1.893	1.852	.186	.185	-	.011	.59
Edge men	110	124	10.03	10.06	2.423	2.376	.241	.236	-	.047	1.94
Edge men's helpers.	6	6	10.00	10.00	1.70	1.55	.170	.155	-	.150	8.87
Edge catchers	15	8	10.00	10.00	1.616	1.500	.162	.150	-	.116	7.18
Edge lifters	5	4	10.00	10.00	1.250	1.250	.125	.125			
Electricians	4	6	10.50	10.00	2.380	2.278	.227	.228	-	.102	4.28
Engineers	94	111	10.07	10.10	2.462	2.433	.244	.246	+	.021	.85
Estimators	1	1	10.00	10.00	2.000	2.000	.200	.200			
Filers	106	107	10.02	10.08	4.505	4.464	4.40	.443	-	.041	.61
Filers' helpers	10	20	10.00	10.00	2.250	2.355	.225	.236	+	.105	4.67
Firemen	63	66	10.32	10.18	1.874	1.881	.182	.185	+	.007	.37
Foreman	145	160	10.08	10.08	2.925	3.020	.290	.301	+	.105	3.59
Graders	168	216	10.00	10.03	2.149	2.137	.215	.213	-	.012	.53
Harness makers	2	3	10.00	10.00	2.250	1.790	.225	.179	-	.460	20.44
Helpers	213	402	10.13	10.00	1.179	1.413	.116	.141	+	.234	19.85
Helpers, female	1	1	10.00	10.00	.500	.500	.050	.050			
Hotel keepers		9		10.00		.900		.900			
Hotel keepers, female		2		10.00		.925		.925			
Housekeepers, female		1		10.00		.500		.500			
Inspectors	7	4	10.00	10.00	1.830	1.900	.183	.190	+	.070	3.83
Laborers	5,374	5,487	10.04	10.07	1.598	1.678	.159	.162	+	.030	1.88
Laborers, female.	110	110	10.00	10.00	.789	.789	.079	.079			
Lath men	12	27	10.00	10.00	1.958	2.067	.196	.207	+	.109	5.56
Lath feeders	16	1	10.00	10.00	1.800	1.650	.180	.165	-	.150	8.33
Lath pullers	12	13	10.00	10.00	1.800	1.846	.180	.185	+	.046	2.56
Lath tier men	7	1	10.00	10.00	1.671	1.750	.167	.175	+	.079	4.73
Laundrymen		2		10.00		1.350		.135			
Laundry women		2		10.00		1.350		.135			
Linemen		1		10.00		2.12		.212			
Loaders	195	166	10.00	10.00	1.784	1.823	.178	.187	+	.039	2.19
Log men	6	10	10.00	10.00	2.250	1.825	.225	.183	-	.425	18.89
Lumber catchers	12	16	10.00	10.00	1.802	1.634	.180	.168	-	.118	6.54
Lumber handlers	13	97	10.00	10.00	1.200	1.691	.120	.169	+	.491	40.92
Lumber jacks	8	9	10.00	10.00	1.550	1.639	.155	.169	+	.139	8.97
Lumber markers	2	2	10.00	10.00	2.250	2.250	.225	.225			
Machine tenders	352	275	10.01	10.02	1.789	1.841	.177	.184	+	.072	4.07
Machinists	67	45	10.01	10.02	2.642	2.873	.264	.287	+	.231	8.74
Machinists' apprentices	1		10.00		.750		.075				
Machinists' helpers.	4		10.00		2.013		.201				
Mill hands	493	305	10.00	10.00	1.788	1.913	.179	.191	+	.125	6.99
Millwright	64	51	10.08	10.03	2.733	2.566	.271	.256	-	.168	6.15
Molders		2		10.00		1.875		.188			

TABLE VI—OCCUPATIONS AND WAGES OF EMPLOYEES.—Continued.

Occupations.	Total no. of persons.		Average hours per day.		Average wages per day.		Average wages per hour.		Increase, +, or decrease, —, per day in 1905.		
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	Amt.	Per ct.	
Nailers	4		10.00		1.638		.169				
Oilers	17	13	10.00	10.00	1.766	1.997	.177	.197	+	.201	11.33
Packers	28	22	10.00	10.00	1.962	2.174	.196	.217	+	.212	10.81
Packers, female		3		10.00		1.100		.110			
Painters	1		10.00		2.500		.250				
Pile-bottom builders..	1	3	10.00	10.00	1.500	1.500	.150	.150			
Pilers	353	282	10.00	10.04	2.014	1.954	.201	.195	—	.030	2.99
Planers	42	20	10.00	10.09	2.032	1.859	.206	.186	—	.203	9.94
Pond men	3	3	10.00	10.00	2.250	2.250	.225	.225			
Riders	68	61	10.01	10.05	2.036	1.966	.209	.196	—	.130	6.20
Rivermen	51	40	10.00	10.00	1.961	1.966	.196	.196	+	.005	.25
Salesmen	1	3	10.00	10.00	2.410	2.240	.241	.224	—	.170	7.05
Sanders	8	8	10.00	10.00	1.450	1.450	.145	.145			
Sawyers	266	380	10.01	10.03	3.233	2.891	.323	.287	—	.352	10.89
Sawyers, female	5	2	10.00	10.00	1.452	1.315	.145	.132	—	.137	9.43
Scalers	52	29	10.09	10.17	2.117	1.919	.210	.189	—	.198	9.35
Setters	79	114	10.04	10.06	2.483	2.403	.247	.239	—	.080	3.22
Shinglemen	6	4	10.00	10.00	2.267	2.150	.227	.215	—	.117	5.16
Shipping clerks	6	6	10.00	10.00	2.768	3.062	.277	.306	+	.294	10.62
Slashers	11	8	10.09	10.13	1.636	1.588	.167	.157	—	.098	5.81
Slidemen	2	2	10.00	10.50	2.000	1.750	.200	.167	—	.250	12.50
Sorters	69	83	10.00	10.09	1.850	1.795	.185	.178	—	.055	2.97
Sparemen	3	4	10.00	10.00	2.038	2.000	.208	.200	—	.083	3.98
Stenographers, female		2		9.00		1.625		.1625			
Strikers	4		10.00		1.500		.150				
Strippers		4		10.00		1.850		.185			
Tallymen	37	13	10.00	10.09	1.978	2.144	.198	.214	+	.166	8.49
Teamsters	411	451	10.16	10.16	1.679	1.714	.165	.169	+	.035	2.08
Timekeepers	1	2	10.00	10.00	2.620	2.310	.262	.231	—	.310	11.83
Tinsmiths		1		10.00		2.000		.200			
Trainmen	6		10.00		2.000		.200				
Tram car men	12		10.00		1.500		.150				
Transfer men	33	27	10.00	10.00	1.824	1.761	.182	.176	—	.063	3.45
Trimmer lifters	6	4	10.00	10.00	1.700	1.700	.170	.170			
Trimmers	79	90	10.00	10.02	1.964	1.916	.196	.191	—	.048	2.44
Truck men		26		10.00		1.673		.167			
Veneerers	40	40	10.00	10.00	2.000	2.000	.200	.200			
Wagon makers		1		10.00		2.250		.225			
Waiters		2		10.00		1.000		.100			
Waiters, female		3		10.00		.700		.070			
Watchmen	52	154	10.85	10.19	1.635	1.500	.153	.147	—	.165	9.91
Wipers	3	2	11.33	12.00	1.947	2.020	.172	.168	+	.073	3.73
Woodmen	1,518	588	10.15	10.37	1.507	1.628	.149	.157	+	.121	8.03
Yardmen	61	376	10.00	10.27	1.445	1.630	.145	.162	+	.215	14.88
Total	11,496	11,307	10.08	10.08	\$1.761	\$1.796	\$.175	\$.178	+	\$.035	1.90

TABLE VII—CLASSIFICATION OF DAILY WAGES.

Classified daily wages, (inclusive).	Total number of persons employed.						Average wages per day.					
	Male.		Female.		Total.		Male.		Female.		Total.	
	1904	1905	1904	1905.	1904	1905.	1904.	1905	1904	1905	1904.	1905.
\$.50 to \$.58.	3	11	1	2	4	13	\$.50	\$.50	\$.50	\$.50	\$.50	\$.50
.59 to .66.	25	9	8	8	33	16	.60	.60	.65	.65	.699	.619
.67 to .74.	7	6	1	4	8	10	.686	.693	.700	.700	.693	.696
.75 to .83.	61	63	73	73	134	136	.763	.764	.751	.751	.756	.757
.84 to .91.	47	50	14	15	61	65	.874	.872	.854	.858	.870	.838
.92 to .99.	9	7	.....	.....	9	7	.947	.950	.....	.....	.847	.950
1.00 to 1.08.	131	108	15	14	146	122	1.008	1.002	1.00	1.00	1.035	1.002
1.09 to 1.16.	117	78	1	4	118	82	1.124	1.131	1.15	1.10	1.124	1.129
1.17 to 1.24.	22	6	.....	.....	22	6	1.201	1.20	.....	.....	1.201	1.20
1.25 to 1.33.	605	320	1	2	906	322	1.259	1.251	1.25	1.25	1.260	1.251
1.34 to 1.41.	366	303	2	3	368	306	1.361	1.360	1.38	1.36	1.361	1.36
1.42 to 1.49.	11	15	.....	.....	11	15	1.448	1.449	.....	.....	1.448	1.449
1.50 to 1.58.	2,755	2,274	4	2	2,759	2,276	1.502	1.501	1.51	1.50	1.502	1.501
1.59 to 1.66.	1,525	1,768	.....	.....	1	1,525	1,768	1.628	1.629	.....	1.60	1.628
1.67 to 1.74.	1,095	606	1	.....	1	1,096	609	1.705	1.718	1.73	1.73	1.709
1.75 to 1.83.	1,791	2,737	.....	.....	1	1,791	2,738	1.757	1.783	.....	1.75	1.757
1.84 to 1.91.	544	655	.....	.....	544	655	1.865	1.862	.....	.....	1.865	1.862
1.92 to 1.99.	52	31	.....	.....	52	31	1.945	1.938	.....	.....	1.945	1.938
2.00 to 2.08.	801	764	.....	.....	801	764	2.000	2.002	.....	.....	2.000	2.002
2.09 to 2.16.	77	82	.....	.....	77	82	2.123	2.136	.....	.....	2.123	2.136
2.17 to 2.24.	16	22	.....	.....	16	22	2.200	2.217	.....	.....	2.200	2.217
2.25 to 2.33.	359	306	.....	.....	359	306	2.252	2.254	.....	.....	2.252	2.254
2.34 to 2.41.	33	26	.....	.....	33	26	2.376	2.376	.....	.....	2.376	2.376
2.42 to 2.49.	.....	1	.....	.....	.....	1	.....	2.45	.....	.....	.....	2.45
2.50 to 2.58.	344	346	.....	.....	344	346	2.50	2.50	.....	.....	2.50	2.50
2.59 to 2.66.	31	26	.....	.....	31	26	2.622	2.627	.....	.....	2.622	2.627
2.67 to 2.74.	12	20	.....	.....	12	20	2.693	2.697	.....	.....	2.693	2.697
2.75 to 2.83.	87	131	.....	.....	87	131	2.751	2.758	.....	.....	2.751	2.758
2.84 to 2.91.	5	6	.....	.....	5	6	2.892	2.892	.....	.....	2.892	2.893
2.92 to 2.99.	1	1	.....	.....	1	1	2.94	2.94	.....	.....	2.94	2.94
3.00 to 3.08.	157	108	.....	.....	157	108	3.006	3.001	.....	.....	3.006	3.001
3.09 to 3.16.	2	2	.....	.....	2	2	3.15	3.15	.....	.....	3.15	3.15
3.17 to 3.24.	8	5	.....	.....	8	5	3.201	3.194	.....	.....	3.201	3.194
3.25 to 3.33.	35	20	.....	.....	35	20	3.258	3.27	.....	.....	3.258	3.27
3.34 to 3.41.	6	9	.....	.....	6	9	3.375	3.377	.....	.....	3.375	3.377
3.42 to 3.49.	.....	2	.....	.....	.....	2	.....	3.46	.....	.....	.....	3.46
3.50 to 3.58.	49	36	.....	.....	49	36	3.50	3.50	.....	.....	3.50	3.50
3.59 to 3.66.	1	1	.....	.....	1	1	3.63	3.63	.....	.....	3.63	3.63
3.67 to 3.74.	2	2	.....	.....	2	2	3.67	3.67	.....	.....	3.67	3.67
3.75 to 3.83.	4	4	.....	.....	4	4	3.783	3.77	.....	.....	3.783	3.77
3.84 to 3.91.	6	5	.....	.....	6	5	3.858	3.85	.....	.....	3.853	3.85
4.00 to 4.08.	28	43	.....	.....	28	43	4.009	4.002	.....	.....	4.003	4.002
4.17 to 4.24.	1	7	.....	.....	1	7	4.20	4.191	.....	.....	4.20	4.191
4.25 to 4.33.	6	3	.....	.....	6	3	4.275	4.257	.....	.....	4.275	4.257
4.34 to 4.41.	3	.....	.....	.....	3	.....	4.35	.....	.....	.....	4.35	.....
4.42 to 4.49.	.....	1	.....	.....	.....	1	.....	4.43	.....	.....	.....	4.43
4.50 to 4.58.	10	13	.....	.....	10	13	4.50	4.50	.....	.....	4.50	4.50
4.59 to 4.66.	.....	2	.....	.....	.....	2	.....	4.615	.....	.....	.....	4.615
4.67 to 4.74.	4	.....	.....	.....	4	.....	4.72	.....	.....	.....	4.72	.....
4.75 to 4.83.	2	3	.....	.....	2	3	4.78	4.783	.....	.....	4.78	4.783
5.00 to 5.08.	66	77	.....	.....	66	77	5.00	5.00	.....	.....	5.00	5.00
5.17 to 5.24.	.....	1	.....	.....	.....	1	.....	5.18	.....	.....	.....	5.18
5.25 to 5.33.	3	8	.....	.....	3	8	5.266	5.25	.....	.....	5.266	5.25
5.50 to 5.58.	5	7	.....	.....	5	7	5.50	5.50	.....	.....	5.50	5.50
6.00 to 6.08.	18	22	.....	.....	18	22	6.00	6.00	.....	.....	6.00	6.00
6.50 to 6.58.	5	4	.....	.....	5	4	6.50	6.50	.....	.....	6.50	6.50
7.00 to 7.08.	9	7	.....	.....	9	7	7.00	7.00	.....	.....	7.00	7.00
7.50 to 7.58.	4	4	.....	.....	4	4	7.50	7.50	.....	.....	7.50	7.50
7.75 to 7.83.	2	.....	.....	.....	2	.....	7.75	.....	.....	.....	7.75	.....
8.00 to 8.08.	4	1	.....	.....	4	1	8.00	8.00	.....	.....	8.00	8.00
8.25 to 8.33.	1	1	.....	.....	1	1	8.25	8.25	.....	.....	8.25	8.25
8.50 to 8.58.	2	1	.....	.....	2	1	8.50	8.50	.....	.....	8.50	8.50
9.00 to 9.08.	.....	1	.....	.....	.....	1	.....	9.00	.....	.....	.....	9.00
10.00 to 10.08.	1	1	.....	.....	1	1	10.00	10.00	.....	.....	10.00	10.00
15.00 to 15.08.	1	.....	.....	.....	1	.....	15.00	.....	.....	.....	15.00	.....
Total	11,377	11,177	121	130	11,498	11,307	\$1.771	\$1.807	\$.835	\$.843	\$1.767	\$1.766

Remarks.—According to the United States census of 1900, Wisconsin in that year ranked first in this industry among all the states of the Union. There can be no doubt however that the industry as carried on within this state has already attained its maximum, and that henceforth it must decrease in importance as our pine forests become gradually exhausted. For the two years covered by this report the industry apparently shows a gain in some respects and a loss in others. But it should be stated that returns were received from only 69 establishments, less than 7 per cent. of the total number of firms, 1,066, reported by the census of 1900. The data contained in the foregoing tables are therefore not necessarily an index of the actual changes occurring in the industry in the period considered. For the establishments reporting, however, there was an increase in 1905 of 2 per cent. in the capital invested, all items of investment showing a slight gain; an increase of 5 per cent. in the materials used, and a slight increase in the average number of persons employed and in the value of the output. On the other hand, the number of days of operation decreased by 11 per cent., the total wages and salaries paid, by 6 per cent., and the average yearly earnings, by 7 per cent. Employment was very irregular each year, although less so than would be expected in an industry in which the occupations are so diversified, and in which the nature of the work done varies so widely in the different seasons of the year. But 1 per cent. of the total number of employees were females. The majority of these were employed in a subsidiary capacity, and not in occupations peculiar to the industry. They averaged ten hours of work per day.

33. MACHINERY—75 ESTABLISHMENTS.

TABLE I—MANAGEMENT AND OPERATION.

Classification.	Number in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Number of private firms	35	31	— 4	11.43
Number of male partners	58	52	— 6	10.34
Number of female partners	2	2	—	—
Total number of partners	60	54	— 6	10.00
Number of corporations	40	44	+ 4	10.—
Number of male stockholders	297	206	— 91	30.64
Number of female stockholders	33	41	+ 8	24.24
Total number of stockholders	330	247	— 83	5.15
Total number of partners and stockholders	390	301	— 89	22.82
Smallest number of persons employed	5,095	6,637	+ 1,542	30.27
Greatest number of persons employed	6,147	7,659	+ 1,512	24.60
Average number of persons employed	5,639	6,969	+ 1,271	22.34
Average days in operation	295	310	+ 15	5.08

TABLE II—INVESTMENT.

Classification.	Capital invested in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent.
Land	\$659,496 19	\$716,080 51	+ \$56,584 32	8.58
Buildings and fixtures	2,047,860 79	2,383,610 36	+ 335,749 57	16.39
Machinery, etc.	2,731,635 57	4,186,134 51	+ 454,498 94	12.18
Cash and other capital	6,711,507 29	7,324,587 72	+ 613,080 43	9.13
Total	\$13,150,499 84	\$14,610,413 10	+ \$1,459,913 26	11.10

TABLE III A—VALUE OF MATERIAL AND LABOR EMPLOYED, AND OF PRODUCT.

Classification.	Value of material used, wages and salaries paid in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount	Per cent
Raw material used	\$5,431,465 95	\$6,293,270 70	+ \$861,804 75	15.87
Other material used	644,939 96	670,424 11	+ 25,484 15	3.95
Wages	3,393,442 24	4,218,300 03	+ 824,857 79	24.31
Salaries	700,439 26	848,310 50	+ 147,871 24	21.11
Profit and minor expenses	2,549,965 74	3,238,263 50	+ 688,297 76	26.99
Goods made and work done	12,720,253 15	15,268,568 84	+ 2,548,315 69	20.03

TABLE III B—ANALYSIS OF TABLE III A.

Classification.	1904	1905.
Value of goods made and work done (gross product)	\$12,720,253 15	\$15,268,538 84
Value of stock used and material consumed in production	6,076,405 91	6,963,694 81
Industry product (gross production less value of stock and material)	6,643,847 24	8,304,874 03
Wages and salaries (Labor's direct share of product)	4,093,881 50	5,066,610 53
Profit and minor expense fund (industry product less wages)	2,549,965 74	3,238,263 50
	Per cent.	Per cent.
Percentage of industry product paid in wages	61.73	61.01
Percentage of industry product devoted to profit and minor expenses	38.22	38.99

TABLE IV—AVERAGE CAPITAL, ETC., PER EMPLOYEE.

Classification.	Average capital, product and yearly earnings in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent.
Average capital per employee	\$1,995 82	\$2,099 20	+ \$103 38	5.18
Average product per employee	1,930 53	2,193 76	+ 263 23	13.64
Average yearly earnings	566 49	606 08	+ 9 59	1.61

TABLE V—RANGE OF EMPLOYMENT AND OF UNEMPLOYMENT.

Months.	Total no. of persons employed in		Percentage of			
			Employment in		Unemployment in	
	1904.	1905.	1904.	1905.	1904.	1905.
January	5,095	6,637	82.89	86.66	17.11	13.34
February	5,563	6,644	90.50	86.75	9.50	13.25
March	5,767	6,970	93.82	91.00	6.18	9.00
April	5,911	7,049	96.16	92.04	3.84	7.96
May	6,147	8,873	100.—	89.74	.....	10.23
June	6,073	6,695	98.80	87.41	1.20	12.59
July	5,745	6,763	93.46	88.30	6.54	11.70
August	5,636	6,788	91.20	88.63	8.80	11.37
September	5,388	6,850	87.65	89.44	12.35	10.56
October	5,393	7,233	87.73	94.44	12.27	5.56
November	5,754	7,659	93.61	100.—	6.39	.....
December	5,821	7,355	94.70	96.03	5.30	3.97
Average	5,689	6,960	92.55	90.85	7.45	9.15

TABLE VI—OCCUPATIONS AND WAGES OF EMPLOYEES.

Occupations.	Total no. of persons.		Average hours per day.		Average wages per day.		Average wages per hour.		Increase, +, or decrease, - per day in 1905.		
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	Amt. Per ct.		
									Amt.	Per ct.	
Apprentices	433	262	9.85	10.07	\$1.094	\$.877	\$.111	\$.087	—	\$.217	19.83
Assemblers	19	25	10.00	10.00	1.917	1.88	.192	.188	—	.037	1.93
Assemblers, female .....	.....	5	.....	9.00	.....	.94	.....	.104	.....	.....	.....
Bench hands	8	31	10.00	10.00	1.813	2.481	.181	.248	+	.332	18.31
Blacksmiths	71	78	9.97	10.03	2.813	2.826	.282	.282	+	.013	0.46
Boat makers	6	1	10.00	10.00	2.308	2.00	.221	.20	—	.209	9.42
Boiler makers	29	21	10.00	10.00	3.04	3.05	.304	.305	+	.01	0.33
Brasiers	13	63	10.03	10.00	2.50	1.897	.250	.19	—	.703	24.12
Carpenters	137	137	9.93	9.97	2.203	2.233	.222	.224	+	.03	1.36
Chemists	1	1	10.03	10.00	1.86	2.25	.185	.225	+	.39	20.97
Chippers .....	.....	113	.....	10.00	.....	1.715	.....	.172	.....	.....	.....
Core makers	144	135	10.00	9.99	2.281	2.312	.228	.231	+	.031	1.36
Core makers, female	15	32	10.00	10.00	.793	.843	.079	.084	+	.05	6.31
Crane men	17	34	10.00	10.00	2.012	2.037	.201	.207	+	.055	2.73
Cupola tenders	11	10	10.00	10.00	2.041	2.005	.204	.201	—	.036	1.76
Draftsmen	60	81	8.83	8.78	2.991	2.58	.330	.294	—	.411	13.74
Dressers	3	3	10.99	10.00	2.917	3.067	.292	.307	+	.15	5.11
Drillers	47	9	10.00	10.00	1.509	1.222	.151	.122	—	.287	19.03
Electricians	21	26	10.00	10.12	2.481	2.075	.248	.205	—	.406	16.33
Engineers	22	22	10.55	10.45	2.41	2.258	.228	.216	—	.152	6.31
Erectors	6	4	10.00	10.00	2.583	3.00	.258	.30	+	.417	16.14
Firemen	9	16	11.11	10.75	2.077	2.011	.187	.187	—	.063	3.18
Foremen	82	83	9.91	9.98	3.532	3.726	.353	.373	+	.194	5.49
Furnace tenders	2	9	10.00	10.00	2.625	2.391	.263	.239	—	.234	8.91
Galvanizers	8	8	10.03	10.00	1.80	2.373	.18	.237	+	.573	31.83
Grinders	5	4	10.00	10.00	1.594	1.66	.159	.166	+	.066	4.11
Heaters	4	.....	10.00	.....	2.438	.....	.244	.....	.....	.....	.....
Helpers	1,422	1,425	9.94	9.99	1.582	1.626	.159	.163	+	.011	2.73
Iron workers	16	21	10.00	10.00	2.448	1.907	.249	.191	—	.581	23.35
Laborers	428	691	9.95	10.02	1.646	1.727	.165	.172	+	.061	4.92
Lathe hands	22	22	10.00	10.00	1.807	1.961	.181	.196	+	.154	8.52
Liners	3	2	10.00	9.00	1.65	3.00	.165	.333	+	1.35	81.82
Machine operators	333	350	10.00	9.99	1.781	1.859	.178	.186	+	.075	4.38
Machinists	1,779	1,569	9.91	10.02	2.462	2.561	.248	.256	+	.099	4.02
Machinists' helpers	81	442	9.91	10.00	1.728	1.582	.174	.158	—	.146	8.45
Masons	4	1	9.75	10.00	3.75	3.00	.385	.30	—	.75	20.00
Millwrights	46	65	9.74	10.00	3.063	2.931	.314	.293	—	.132	4.31
Molders	458	496	9.95	9.92	2.811	2.856	.283	.288	+	.045	1.69
Molders' helpers	33	11	10.00	9.94	1.60	1.55	.16	.156	—	.045	2.81
Oilers	2	.....	10.00	.....	1.775	.....	.178	.....	.....	.....	.....
Packers	1	.....	10.00	.....	1.50	.....	.15	.....	.....	.....	.....
Packers, female	5	6	10.00	10.00	.782	.735	.078	.074	—	.047	6.01
Painters	44	68	10.00	10.00	2.055	2.003	.206	.20	—	.052	2.53
Pattern makers	160	151	9.76	10.00	2.909	3.021	.298	.302	+	.112	3.85
Pattern makers' help- ers	9	6	10.00	10.00	1.50	1.50	.15	.15	.....	.....	.....
Picklers	1	1	10.00	10.00	1.75	1.75	.175	.175	.....	.....	.....
Platers	1	1	10.00	10.00	2.25	2.42	.225	.242	+	.17	7.50
Polishers	96	122	10.00	10.00	2.032	2.054	.203	.205	+	.022	1.08
Press hands	18	18	10.00	10.00	1.722	1.722	.172	.172	.....	.....	.....
Repairs	3	2	10.00	10.00	1.867	2.00	.187	.20	+	.133	7.12
Seamstresses	3	4	9.00	9.00	.867	.953	.096	.106	+	.086	9.92
Shipping clerks	77	78	9.44	9.12	1.394	2.071	.201	.227	+	.17	9.35
Steam fitters	39	17	10.00	10.00	2.012	2.108	.201	.217	+	.156	7.75
Stenographers	2	7	9.00	9.29	1.625	1.786	.181	.192	+	.161	9.91
Stenographers, female	9	8	9.33	8.25	1.728	1.516	.185	.184	—	.212	12.27
Structural workers	55	49	10.00	10.00	1.901	1.913	.190	.191	+	.012	0.63
Teamsters	18	16	9.94	10.00	1.984	1.96	.20	.196	—	.021	1.21
Testers	53	79	10.00	10.00	2.075	2.05	.208	.206	+	.025	1.20
Time keepers	3	3	10.00	10.00	2.083	2.167	.208	.217	+	.054	4.03
Tinners	31	35	10.00	10.00	2.166	2.166	.217	.217	.....	.....	.....
Tool makers .....	.....	20	.....	10.00	.....	3.075	.....	.306	.....	.....	.....
Trackmen	13	.....	10.00	.....	1.977	.....	.198	.....	.....	.....	.....
Watchmen	35	35	11.47	11.23	1.751	1.86	.158	.166	+	.109	6.23
Woodworkers	26	33	10.00	10.00	1.967	1.988	.197	.199	+	.021	1.07
Total	6,513	7,072	9.92	9.98	\$2.071	\$2.082	\$.209	\$.209	+	\$.011	0.53

TABLE VII—CLASSIFICATION OF DAILY WAGES.

Classified daily wages, (inclusive).	Total number of persons employed.						Average wages per day.					
	Male.		Female.		Total.		Male.		Female.		Total.	
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.
\$0.33 or less	6	6			6	6	\$0.33					\$0.33
.34 to .41.	6	10			16	10	\$0.373					\$0.373
.42 to .49.	3	3	2		5	4	.42	.42	\$.42	\$.42		.42
.50 to .53.	46	81		1	46	86	.521	.528		.564	.521	.53
.59 to .66.	16	17		2	16	19	.606	.606		.63	.606	.608
.67 to .74.	24	15	1		25	22	.683	.674	.73	.679	.684	.675
.75 to .83.	132	127	15	12	147	139	.752	.756	.792	.787	.757	.759
.84 to .91.	12	31	1		13	33	.873	.889	.90	.891	.879	.889
.92 to .99.	15	3			15	5	.947	.927		.92	.947	.924
1.00 to 1.03.	181	193	4	9	185	202	1.002	1.003	1.013	1.00	1.002	1.003
1.09 to 1.16.	25	11			25	11	1.116	1.117			1.116	1.117
1.17 to 1.24.	6	8	1	1	7	9	1.175	1.196	1.17	1.18	1.174	1.194
1.25 to 1.33.	196	152	2	2	198	154	1.255	1.252	1.275	1.25	1.255	1.252
1.34 to 1.41.	47	70			47	70	1.335	1.337			1.335	1.337
1.42 to 1.49.	5	10			5	10	1.436	1.433			1.436	1.433
1.50 to 1.58.	721	625	1	2	722	627	1.501	1.501	1.50	1.50	1.501	1.501
1.59 to 1.66.	589	603			589	603	1.623	1.623			1.623	1.623
1.67 to 1.74.	123	135		2	123	137	1.698	1.70		1.67	1.698	1.70
1.75 to 1.83.	771	1,145		1	771	1,146	1.753	1.76		1.75	1.753	1.76
1.84 to 1.91.	202	173			202	173	1.867	1.872			1.867	1.872
1.92 to 1.99.	20	29			20	29	1.943	1.945			1.943	1.945
2.00 to 2.08.	648	565	4	1	652	596	2.002	2.002	2.00	2.00	2.002	2.002
2.09 to 2.16.	81	39			81	39	2.125	2.141			2.125	2.141
2.17 to 2.24.	24	33			24	33	2.198	2.202			2.198	2.202
2.25 to 2.33.	368	408	1		369	408	2.253	2.255	2.33		2.253	2.255
2.34 to 2.41.	133	80			133	80	2.377	2.374			2.377	2.374
2.42 to 2.49.	17	139			17	139	2.448	2.45			2.448	2.45
2.50 to 2.53.	667	524		1	667	525	2.511	2.501	2.50		2.511	2.501
2.59 to 2.66.	109	127			108	127	2.632	2.632			2.632	2.632
2.67 to 2.74.	39	42			39	42	2.699	2.691			2.699	2.691
2.75 to 2.83.	305	339			305	339	2.754	2.755			2.754	2.755
2.84 to 2.91.	109	123			109	123	2.88	2.885			2.88	2.885
2.92 to 2.99.	1	75			1	75	2.95	2.95			2.95	2.95
3.00 to 3.08.	356	397			356	397	3.005	3.003			3.005	3.003
3.09 to 3.16.	59	51			59	51	3.138	3.127			3.138	3.127
3.17 to 3.24.	18	17			18	17	3.198	3.198			3.198	3.198
3.25 to 3.33.	115	203			115	203	3.256	3.271			3.256	3.271
3.34 to 3.41.	32	30			32	30	3.332	3.338			3.332	3.338
3.42 to 3.49.	2	2			2	2	3.455	3.45			3.455	3.45
3.50 to 3.58.	78	127			78	127	3.501	3.501			3.501	3.501
3.59 to 3.66.	15	11			15	11	3.607	3.625			3.607	3.625
3.67 to 3.74.	4	4			4	4	3.70	3.70			3.70	3.70
3.75 to 3.83.	23	24			23	24	3.752	3.756			3.752	3.756
3.84 to 3.91.	9	9			9	9	3.856	3.85			3.856	3.85
4.00 to 4.08.	27	25			27	25	4.00	4.001			4.00	4.001
4.17 to 4.24.	1	2			1	2	4.20	4.17			4.20	4.17
4.25 to 4.33.	6	3			6	3	4.272	4.256			4.272	4.255
4.40 to 4.48.		9				9	4.50				4.50	
4.47 to 4.74.		2				2	4.67				4.67	
4.75 to 4.83.	1	2			1	2	4.80	4.75		4.80	4.75	
4.84 to 4.91.		1				1	4.90				4.90	
5.00 to 5.08.	17	2			17	2	5.00	5.00			5.00	5.00
5.09 to 5.16.		4				4	5.10				5.10	
5.50 to 5.58.	3	1			3	1	5.50	5.50			5.50	5.50
5.84 to 5.91.		1				1	5.85				5.85	
6.00 to 6.08.	2	3			2	3	6.00	6.00			6.00	6.00
6.50 to 6.58.		1				1	6.50				6.50	
7.09 to 7.16.		3				3	7.15				7.15	
7.17 to 7.24.	1				1		7.20				7.20	
7.75 to 7.83.		1				1	7.75				7.75	
8.25 to 8.33.	1				1		8.33				8.33	
8.67 to 8.74.	1				1		8.70				8.70	
8.84 to 8.91.		1				1	8.90				8.90	
Total ...	6,481	7,017	32	55	6,513	7,072	\$2.076	\$2.091	\$1.061	\$1.061	\$2.077	\$2.082

Remarks.—The manufacture of machinery has for years been one of the most important industries of Wisconsin. It has experienced an exceedingly rapid growth, the output in 1900 being nearly treble that of 1890. In the same decade the number of establishments increased from 155 to 272. Reports from about 28 per cent. of these form the basis of the foregoing tables. A very substantial gain is evident for the years 1904 and 1905. This is seen in the increase in 1905 of 11 per cent. in the total capital invested, all items of investment showing an increase; of 14 per cent. in the value of the materials used, of 22 per cent. in the average number of employees, and of 20 per cent. in the value of the output. The average yearly earnings of employees increased about 2 per cent. Labor's share of the industry product was large each year—62 per cent. in 1904 and 61 per cent. in 1905. Employment was somewhat irregular, especially in 1905. The number of female employees was each year less than 1 per cent. of the total number of persons employed. Their number nearly doubled, however, for 1905. They were employed chiefly in occupations peculiar to the industry, only about one-third working in accessory occupations. They averaged about 9 2/3 hours of work per day in 1904. In 1905 their hours were about 2 per cent. less, and their average daily wages 10 per cent. less. A small number of children were also employed in this industry.

34. MALT—14 ESTABLISHMENTS.

TABLE I.—MANAGEMENT AND OPERATION.

Classification.	Number in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent.
Number of private firms	2	2		
Number of male partners	4	4		
Number of female partners				
Total number of partners	4	4		
Number of corporations	12	12		
Number of male stockholders	1,264	1,350	+ 86	+ 6.80
Number of female stockholders	28	31	+ 3	+ 10.71
Total number of stockholders.....	1,292	1,381	+ 89	+ 6.89
Total number of partners and stockholders .	1,296	1,385	+ 89	+ 6.87
Smallest number of persons employed	156	164	+ 8	+ 5.19
Greatest number of persons employed	305	344	+ 39	+ 12.13
Average number of persons employed	267	282	+ 15	+ 5.62
Average number of days in operation	462	417	— 45	— 9.47

TABLE II—INVESTMENT.

Classification.	Capital invested in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Land	\$319,709 06	\$327,306 05	+ \$7,686 99	2.40
Buildings and fixtures	1,477,719 82	1,517,024 47	+ 39,304 65	2.67
Machinery, etc.,	491,338 16	532,084 39	+ 40,746 23	18.46
Cash and other capital	1,855,844 04	1,754,745 35	— 101,098 69	5.45
Total	\$4,144,631 08	\$4,181,250 26	+ \$36,619 18	0.88

TABLE III A—VALUE OF MATERIALS AND LABOR EMPLOYED, AND OF PRODUCT.

Classification.	Value of material used, wages and salaries paid in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Raw material used	\$3,730,710 46	\$3,625,484 54	— \$105,225 92	2.82
Other material used	201,249 52	180,945 29	— 20,304 23	10.09
Wages	179,060 88	177,052 88	— 2,008 00	1.12
Salaries	86,115 16	74,747 67	— 11,367 49	1.59
Profit and minor expenses ..	2,004,811 82	2,029,113 50	— 65,098 23	3.14
Goods made and work done..	6,291,947 84	6,087,343 97	— 204,603 87	3.25

TABLE III B—ANALYSIS OF TABLE III A.

Classification.	1904.	1905.
Value of goods made and work done (gross product)	\$6,291,947 84	\$6,087,343 97
Value of stock used and material consumed in production	3,931,959 98	3,806,429 83
Industry product (gross production less value of stock and material)	2,359,987 86	2,280,914 14
Wages and salaries (Labor's direct share of product)	265,176 04	251,800 55
Profit and minor expense fund (industry product less wages)	2,094,811 82	2,029,113 59
Percentage of industry product paid in wages	11.24	11.04
Percentage of industry product devoted to profit and minor expenses	88.76	88.96

TABLE IV—AVERAGE CAPITAL, ETC., PER EMPLOYEE.

Classification.	Average capital, product and yearly earnings in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent.
Average capital per employee	\$15,522 96	\$14,827 13	— \$695 83	4.48
Average product per employee	23,561 60	22,586 33	— 975 27	4.14
Average yearly earnings	670 67	627 84	— 42 83	6.39

TABLE V—RANGE OF EMPLOYMENT AND OF UNEMPLOYMENT.

Months.	Total no. of persons employed in		Percentage of			
			Employment in		Unemployment in	
	1904.	1905.	1904.	1905.	1904.	1905.
January	305	306	100.—	88.95	.....	11.05
February	300	305	98.36	88.66	1.64	11.34
March	305	303	100.	88.08	.....	11.92
April	302	311	99.02	90.41	0.98	9.59
May	293	311	96.07	90.41	3.93	9.59
June	249	289	81.64	84.01	18.36	15.99
July	186	199	60.98	57.85	39.02	42.15
August	156	164	51.15	47.67	48.85	52.33
September	220	198	72.13	57.56	27.87	42.44
October	297	323	97.33	93.90	2.62	6.10
November	296	334	97.05	97.09	2.95	2.91
December	294	344	96.39	100.—	3.61	.....
Average	267	282	87.54	81.98	12.46	18.02

TABLE VI—OCCUPATIONS AND WAGES OF EMPLOYEES.

Occupations.	Total no. of persons.		Average hours per day.		Average wages per day.		Average wages per hour.		Increase, +, or decrease, —, per day in 1905.	
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	Amt. Per cent.	
									Amt.	Per cent.
Bag menders, female	7	10	10		\$.867		\$.087			
Carpenters	2	2	9.50	9.50	1.375	\$1.375	.14	\$.14		
Elevator men	23	23	10	10	1.992	1.92	.199	.192	— \$.072	3.61
Engineers	24	21	9.83	10.19	2.222	2.346	.226	.230	+	.124 5.59
Firemen	15	21	10.27	10.19	1.816	1.847	.177	.181	+	.031 1.70
Foremen	6	6	10	10	3.412	3.367	.341	.337	—	.055 1.61
Helpers	8	15	10	10	1.869	1.739	.187	.174	—	.130 6.96
Laborers	56	46	10	10	1.690	1.679	.169	.168	—	.011 5.56
Maltsters	161	192	9.97	10	2.025	2.108	.203	.211	+	.083 4.10
Millwrights	4	3	10	10	2.16	2.167	.216	.217	+	.007 3.24
Teamsters	8	6	10	10	2.00	2.00	.20	.20		
Total and av.	314	340	10.01	10.21	\$1.961	\$2.034	\$.196	\$.199	+	\$.073 3.72

TABLE VII—CLASSIFICATION OF DAILY WAGES.

Classified daily wages, (inclusive).	Total number of persons em- ployed.						Average wages per day.					
	Male.		Female.		Total.		Male.		Female.		Total.	
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.
\$.50 to .58.	1	1			1	1	\$.50	\$.50			\$.50	\$.50
.75 to .83.			3		3				\$.75		.75	
.84 to .91.			2		2				.91		.91	
1.00 to 1.08.		1	2		2	1	1.00	1.00			1.00	1.00
1.25 to 1.33.	4				4		1.28				1.28	
1.34 to 1.41.	1	1			1	1	1.35	1.35			1.35	1.35
1.50 to 1.58.	19	31			19	31	1.50	1.54			1.50	1.54
1.59 to 1.66.	9	8			9	8	1.654	1.654			1.654	1.654
1.67 to 1.74.	14	10			14	10	1.70	1.686			1.70	1.686
1.75 to 1.83.	50	44			50	44	1.794	1.708			1.794	1.768
1.84 to 1.91.	12	17			12	17	1.851	1.859			1.851	1.859
1.92 to 1.99.	12	4			12	4	1.93	1.96			1.93	1.96
2.00 to 2.08.	146	63			146	63	2.041	2.001			2.041	2.001
2.09 to 2.16.	4	98			4	98	2.155	2.14			2.155	2.14
2.17 to 2.24.	4	6			4	6	2.215	2.202			2.215	2.202
2.25 to 2.33.	2	16			2	16	2.25	2.264			2.25	2.264
2.34 to 2.41.		1				1		2.39				2.39
2.42 to 2.49.		1				1		2.43				2.43
2.50 to 2.58.	16	19			16	19	2.50	2.50			2.50	2.50
2.59 to 2.66.	6	4			6	4	2.65	2.645			2.65	2.645
2.67 to 2.74.	2	7			2	7	2.67	2.67			2.67	2.67
2.84 to 2.91.		2				2		2.85				2.85
3.00 to 3.08.	2	3			2	3	3.00	3.03			3.00	3.03
3.25 to 3.33.	1	1			1	1	3.33	3.33			3.33	3.33
5.00 to 5.08.	2	2			2	2	5.00	5.00			5.00	5.00
Total and average	307	340	7		314	340	\$1.986	\$2.034			\$1.961	\$2.034

Remarks.—In general this industry shows a slight loss for 1905. Although there was a small increase in the total capital invested—the sum devoted to machinery increasing over 18 per cent.,—and an increase of 6 per cent. in the average number of persons employed, there was a decrease of 9 per cent. in the number of days of operation, and of from 1 per cent to 3 per cent. in the materials used, the total wages and salaries paid, and the value of the output. The average yearly earnings of employees were in consequence about 6 per cent. less in 1905. The number of days of operation—462 in 1904 and 417 in 1905—indicates that both day and night shifts were worked for a portion of the year. Employment was very irregular each year. July, August, and September were the months of maximum unemployment. This was due to the nature of the industry, since in those months the previous year's grain was becoming exhausted, while the new crop was only beginning to be available.

Females were employed only in 1904, when seven found work in the subsidiary occupation of bag menders. They worked 10 hours per day. Men's hours were slightly over 10 per day, and increased about 2 per cent. in 1905. Labor's share of the industry product was exceptionally small each year—only 11 per cent.

35. MALT LIQUORS—63 ESTABLISHMENTS.

TABLE I—MANAGEMENT AND OPERATION.

Classification.	Number in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Number of private firms.....	25	23	— 2	8.00
Number of male partners.....	32	30	— 2	6.25
Number of female partners.....	4	4	.....	.....
Total number of partners.....	36	34	— 2	5.56
Number of corporations.....	38	40	+ 2	5.26
Number of male stockholders.....	360	370	+ 10	2.78
Number of female stockholders.....	84	87	+ 3	3.57
Total number of stockholders.....	444	457	+ 13	2.93
Total number of partners and stockholders..	480	491	+ 11	2.29
Smallest number of persons employed.....	2,456	2,471	+ 15	0.61
Greatest number of persons employed.....	3,041	3,163	+ 122	4.01
Average number of persons employed.....	2,699	2,802	+ 103	3.82
Average days in operation.....	325	322	— 3	0.92

TABLE II—INVESTMENT.

Classification,	Capital invested in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Land	\$7,891,300 08	\$8,210,740 87	+ \$319,440 84	4.14
Buildings and fixtures.....	4,589,412 22	4,674,749 90	+ 85,337 68	1.86
Machinery, etc.	3,679,213 56	3,728,416 67	+ 49,203 11	1.34
Cash and other capital.....	9,792,964 81	11,416,862 89	+ 623,898 08	6.37
Total	\$25,952,890 62	\$27,030,770 33	+\$1,077,879 71	4.15

TABLE III A—VALUE OF MATERIALS AND LABOR EMPLOYED, AND OF PRODUCT.

Classification.	Value of material used, wages and salaries paid in		Increase, +, or decrease, -, in 1905.	
	1904.	1905.	Amount.	Per cent
Raw material used	\$3,352,425 98	\$3,444,119 31	+ \$91,693 33	2.74
Other material used	1,299,880 00	1,315,447 98	+ 15,567 98	1.20
Wages	1,491,300 63	1,563,111 80	+ 76,811 17	5.15
Salaries	540,781 96	573,853 16	+ 33,071 20	7.70
Profit and minor expenses....	9,357,859 66	9,411,589 97	+ 53,730 31	0.57
Goods made and work done..	\$16,042,248 23	\$16,313,122 22	+ \$270,873 99	1.69

TABLE III B—ANALYSIS OF TABLE III A.

Classification.	1904.	1905.
Value of goods made and work done (gross product)	\$16,042,248 23	\$16,313,122 22
Value of stock used and material consumed in production	4,652,305 98	4,759,567 29
Industry product (gross production less value of stock and material)	11,389,942 25	11,553,554 93
Wages and salaries (Labor's direct share of product)	2,032,082 59	2,141,934 36
Profit and minor expense fund (industry product less wages)	9,357,859 66	9,411,589 97
	Per cent.	Per cent.
Percentage of industry product paid in wages.....	17.84	18.54
Percentage of industry product devoted to profit and minor expenses	32.16	81.46

TABLE IV—AVERAGE CAPITAL, ETC., PER EMPLOYEE.

Classification.	Average capital, product and yearly earnings in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent.
Average capital per employee.....	\$9,615 74	\$9,646 96	+ \$31 22	0.32
Average product per employee.....	5,943 77	5,821 96	— 121 81	2.05
Average yearly earnings	552 54	559 64	+ 7 10	1.29

TABLE V—RANGE OF EMPLOYMENT AND OF UNEMPLOYMENT.

Months.	Total no. of persons employed in		Percentages of			
			Employment in		Unemployment in	
	1904.	1905.	1904.	1905.	1904	1905
January	2,461	2,594	80.93	82.01	19.07	17.99
February	2,456	2,471	80.73	78.12	19.22	21.88
March	2,523	2,568	82.97	81.19	17.03	18.81
April	2,634	2,647	86.62	83.69	13.38	16.31
May	2,731	2,675	89.81	84.57	10.19	15.43
June	2,904	3,130	95.50	98.96	4.50	1.04
July	3,041	3,136	100.—	99.15	0.00	0.85
August	3,014	3,163	99.11	100.—	0.89	0.00
September	2,877	3,086	94.61	97.57	5.39	2.43
October	2,694	2,906	88.59	91.88	11.41	8.12
November	2,577	2,637	84.74	83.37	15.26	16.63
December	2,474	2,610	81.35	82.52	18.65	17.48
Average	2,699	2,802	88.75	88.59	11.25	11.41

TABLE VI—OCCUPATIONS AND WAGES OF EMPLOYEES.

Occupations.	Total no. of persons.		Average hours per day.		Average wages per day.		Average wages per hour.		Increase, +, or decrease, —, per day in 1905.		
	1904.	1905.	1904	1905.	1904.	1905.	1904.	1905.	Amt.	Per ct.	
Apprentices	14	14	8.21	8	\$1.499	\$1.461	\$.183	\$.183	—	\$.038	2.54
Barkeepers	1		8		1.25		.156				
Barkeepers' helpers	1		8		.63		.085				
Blacksmiths	4	4	9.75	8.50	2.875	2.875	.295	.338			
Bottlers	212	236	8.63	8.56	1.253	1.166	.136	.136	—	.087	6.94
Bottlers, female	38	26	8.84	9.16	.851	.971	.096	.106	+	.12	14.10
Box carriers	36		8		.831		.104				
Brewers	269	268	9.11	9.06	2.381	2.393	.261	.264	—	.012	.50
Brewers' helpers	3	9	10	10	1.417	1.644	.142	.164	+	.227	16.02
Carpenters	63	66	8.22	8.11	2.537	2.605	.309	.321	+	.068	2.03
Cellar men	86	127	8.66	8.46	2.34	2.495	.27	.295	+	.155	6.02
Clerks	4		8.50		2.315		.272				
Coopers	77	72	8.04	8.03	2.618	2.688	.325	.333	+	.075	2.87
Corkers		283		8				.163			
Electricians	1	3	8	8	3.85	2.923	.481	.365	+	.073	1.90
Elevator men	2		8		2.75		.344				
Engineers	44	41	9.39	9.43	2.471	2.428	.263	.257	—	.045	1.74
Firemen	43	37	9.40	9.05	2.061	2.11	.219	.232	+	.049	2.38
Foremen	44	30	8.41	8.53	3.047	2.915	.362	.342	—	.132	4.33
Galvanizers	3		8		2.167		.271				
Galvanizers' helpers	1		8		1.00		.125				
Helpers	91	162	9.41	8.42	1.461	1.139	.155	.135	—	.322	22.04
Helpers, female	15	11	9.60	10	.774	.809	.081	.081	+	.03	4.52
Hostlers	29	31	9.10	8.90	2.096	2.09	.23	.235	—	.006	.29
Kettle men	30	2	8.40	10	2.429	1.75	.289	.175	—	.679	27.95
Labelers, female	74	136	8	8	.514	.532	.064	.067	+	.018	3.50
Laborers	754	314	8.98	9.62	1.781	1.612	.198	.166	—	.169	9.49
Machine tenders	196	12	8.14	9.91	1.403	1.271	.172	.128	—	.132	9.41
Machine tenders, female	3	21	9	10	.75	.68	.076	.068	—	.07	9.33
Machinists	27	40	8.44	8.40	2.494	2.837	.295	.338	+	.343	13.40
Maltsters	71	64	9.03	9.52	2.299	2.203	.252	.231	—	.096	4.22
Maltsters' helpers	5		10		1.50						
Masons	11	3	8	8	3.145	4.40	.393	.55	+	1.255	39.90
Millwrights	17	12	8	8	2.41	2.634	.301	.333	+	.254	10.54
Oilers	3	14	10.67	8.29	2.443	2.224	.229	.208	—	.219	8.87
Packers	20	373	8	8	2.17	2.017	.271	.252	—	.153	7.05
Painters	26	31	8.08	8.10	2.417	2.413	.269	.266	—	.00	.12
Patternmakers	1	1	8	8	3.60	3.00	.45	.375	—	.60	16.67
Peddlers	50	52	9.11	8.90	2.475	2.534	.262	.285	+	.059	2.38
Pitchers		95		8			.252	.294			
Plumbers				8			4.00	.50			
Steam fitters		5		8	3.234	3.234	.404	.404			
Teamsters	159	205	8.92	9.19	2.137	2.16	.239	.235	+	.023	1.08
Tinners	9	8	8	8.13	2.813	2.916	.365	.359	+	.102	3.66
Wagon makers	22	23	8	8	2.307	2.296	.288	.287	—	.011	.48
Washers	63	64	8.25	8.16	2.231	2.321	.27	.273			
Washers, female	116	173	8	8	.83	.884	.11	.115	+	.004	.45
Watchmen	19	20	11.53	9.90	2.053	2.009	.178	.203	—	.044	2.14
Watchers	2	1	8	9	2.31	1.65	.289	.183	—	.66	28.67
Total and average	2,764	3,130	8.74	8.84	\$1.861	\$1.801	\$.213	\$.204	—	\$.06	3.22

TABLE VII—CLASSIFICATION OF DAILY WAGES.

Classified daily wages (inclusive.)	Total number of persons employed.						Average wages per day.						
	Male.		Female.		Total.		Male.		Female.		Total.		
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	
\$.50 to \$.58.	.....	1	74	114	74	115	.....	\$.50	\$.514	\$.519	\$.514	\$.519
.59 to .66.	7	61	.....	59	7	90	\$.643	.649	.....	.60	.643	.613
.67 to .74.	4	4	14	7	18	11	.673	.67	.672	.67	.672	.67	
.75 to .83.	24	29	19	17	43	46	.795	.802	.782	.782	.788	.795	
.84 to .91.	43	145	123	176	166	321	.89	.898	.878	.879	.884	.887	
.92 to .99.	2	.....	.....	.....	2	.....	.96	.....	.....	.....	.96	.....
1.00 to 1.08.	28	38	16	22	44	60	1.006	1.008	1.00	1.00	1.004	1.005	
1.09 to 1.16.	113	102	.....	.....	113	102	1.101	1.101	.....	.....	1.101	1.101
1.17 to 1.24.	12	14	.....	2	12	16	1.185	1.198	.....	1.20	1.185	1.198
1.25 to 1.33.	241	62	.....	.....	241	62	1.293	1.279	.....	.....	1.293	1.279
1.34 to 1.41.	42	237	.....	.....	42	237	1.38	1.395	.....	.....	1.38	1.395
1.42 to 1.49.	.....	3	.....	.....	.....	3	.....	1.427	.....	.....	.....	1.427
1.50 to 1.58.	179	205	.....	.....	179	205	1.512	1.516	.....	.....	1.512	1.516
1.59 to 1.66.	39	36	.....	.....	39	36	1.643	1.621	.....	.....	1.643	1.621
1.67 to 1.74.	54	44	.....	.....	54	44	1.685	1.697	.....	.....	1.685	1.697
1.75 to 1.83.	54	63	.....	.....	54	63	1.768	1.757	.....	.....	1.766	1.757
1.84 to 1.91.	359	21	.....	.....	359	21	1.88	1.877	.....	.....	1.88	1.877
1.92 to 1.99.	22	21	.....	.....	22	21	1.92	1.923	.....	.....	1.92	1.923
2.00 to 2.08.	190	490	.....	.....	190	490	2.013	2.002	.....	.....	2.013	2.002
2.09 to 2.16.	39	53	.....	.....	39	53	2.141	2.137	.....	.....	2.141	2.137
2.17 to 2.24.	130	123	.....	.....	130	123	2.183	2.185	.....	.....	2.183	2.185
2.25 to 2.33.	356	406	.....	.....	356	406	2.274	2.321	.....	.....	2.274	2.321
2.34 to 2.41.	118	48	.....	.....	118	48	2.403	2.396	.....	.....	2.403	2.396
2.42 to 2.49.	15	7	.....	.....	15	7	2.42	2.44	.....	.....	2.42	2.44
2.50 to 2.58.	247	177	.....	.....	247	177	2.542	2.509	.....	.....	2.542	2.509
2.59 to 2.66.	24	3	.....	.....	24	3	2.60	2.617	.....	.....	2.60	2.617
2.67 to 2.74.	20	156	.....	.....	20	156	2.678	2.67	.....	.....	2.678	2.67
2.75 to 2.83.	81	124	.....	.....	81	124	2.799	2.799	.....	.....	2.799	2.799
2.84 to 2.91.	2	3	.....	.....	2	3	2.885	2.89	.....	.....	2.885	2.89
2.92 to 2.99.	.....	7	.....	.....	.....	7	.....	2.949	.....	.....	.....	2.949
3.00 to 3.08.	19	24	.....	.....	19	24	3.00	3.00	.....	.....	3.00	3.00
3.09 to 3.16.	2	.....	.....	.....	2	.....	3.10	.....	.....	.....	3.10	.....
3.17 to 3.24.	1	2	.....	.....	1	2	3.17	3.185	.....	.....	3.17	3.185
3.25 to 3.33.	19	14	.....	.....	19	14	3.305	3.320	.....	.....	3.305	3.322
3.42 to 3.49.	6	1	.....	.....	6	1	3.45	3.42	.....	.....	3.45	3.42
3.50 to 3.58.	2	4	.....	.....	2	4	3.50	3.50	.....	.....	3.50	3.50
3.59 to 3.66.	2	1	.....	.....	2	1	3.60	3.65	.....	.....	3.60	3.65
3.67 to 3.74.	1	2	.....	.....	1	2	3.67	3.67	.....	.....	3.67	3.67
3.75 to 3.83.	1	1	.....	.....	1	1	3.83	3.83	.....	.....	3.83	3.83
3.84 to 3.91.	2	2	.....	.....	2	2	3.85	3.85	.....	.....	3.85	3.85
4.00 to 4.08.	4	4	.....	.....	4	4	4.00	4.00	.....	.....	4.00	4.00
4.09 to 4.16.	1	.....	.....	.....	1	.....	4.16	.....	.....	.....	4.16	.....
4.17 to 4.24.	4	3	.....	.....	4	3	4.17	4.17	.....	.....	4.17	4.17
4.24 to 4.41.	.....	3	.....	.....	.....	3	.....	4.40	.....	.....	.....	4.40
4.50 to 4.58.	2	2	.....	.....	2	2	4.50	4.50	.....	.....	4.50	4.50
4.59 to 4.66.	.....	1	.....	.....	.....	1	.....	4.60	.....	.....	.....	4.60
4.75 to 4.83.	1	1	.....	.....	1	1	4.80	4.80	.....	.....	4.80	4.80
5.00 to 5.08.	3	3	.....	.....	3	3	5.00	5.00	.....	.....	5.00	5.00
5.17 to 5.24.	1	.....	.....	.....	1	.....	5.20	.....	.....	.....	5.20	.....
5.50 to 5.58.	.....	1	.....	.....	.....	1	.....	5.50	.....	.....	.....	5.50
5.75 to 5.83.	1	.....	.....	.....	1	.....	5.75	.....	.....	.....	5.75	.....
5.92 to 5.99.	1	.....	.....	.....	1	.....	5.92	.....	.....	.....	5.92	.....
7.00 to 7.08.	.....	1	.....	.....	.....	1	.....	7.00	.....	.....	.....	7.00
Total and average	2,518	2,753	246	367	2,764	3,120	\$1.969	\$1.942	\$.757	\$.746	\$1.861	\$1.831

Remarks.—The manufacture of malt liquors ranked in 1900 as the sixth industry in the state. In the two years covered by this report the industry experienced a moderate gain in the capital invested, the materials used, the number of employees, the wages paid, and the output. The opening of new lands in the northern part of the state to agriculture, together with constantly increasing transportation facilities, gives promise of the continued growth of this industry. As in the case of the independent malt industry, Labor's share of the industry product was very small, being but 18 per cent. in 1904 and 19 per cent. in 1905. Employment was quite irregular. It was at its maximum in June, July, and August, the months when the product of the industry was in the greatest demand. The number of female employees was 9 per cent. of the total number in 1904, and 12 per cent. in the following year—an increase of nearly 50 per cent. They were, with but few exceptions, employed in occupations accessory to the industry, such as those of bottlers, labelers, and washers. Both male and female employees averaged about 9 hours' work per day. There was an inconsiderable increase in the average hours for 1905, and a slight decrease in the average daily wages.

36. OFFICE AND STORE FIXTURES—15 ESTABLISHMENTS.

TABLE I--MANAGEMENT AND OPERATION.

Classification.	Number in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent.
Number of private firms.....	6	6	.....	.....
Number of male partners.....	13	14	+ 1	7.69
Number of female partners.....	.....	.....	.....	.....
Total number of partners.....	13	14	+ 1	7.69
Number of corporations.....	9	9	.....	.....
Number of male stockholders.....	299	297	— 2	0.67
Number of female stockholders.....	45	46	+ 1	2.22
Total number of stockholders.....	344	343	— 1	0.29
Total number of partners and stockholders..	357	357	.....	.....
Smallest number of persons employed.....	820	911	+ 91	11.10
Greatest number of persons employed.....	1,082	1,029	— 54	4.99
Average number of persons employed.....	1,010	971	— 39	3.86
Average days in operation.....	291	292	+ 1	0.34

TABLE II—INVESTMENT.

Classification.	Capital invested in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Land	\$157,908 00	\$160,550 00	+ \$2,642 00	1.67
Buildings and fixtures	340,117 27	350,538 91	+ 10,421 64	3.03
Machinery, etc.	259,755 38	285,721 45	+ 25,965 07	10.00
Cash and other capital.....	730,203 86	751,034 01	+ 20,830 15	2.85
Total	\$1,487,985,51	\$1,547,844 37	+ \$59,858 86	4.02

TABLE IIIA—VALUE OF MATERIALS AND LABOR EMPLOYED AND OF PRODUCT.

Classification.	Value of material used, wages and salaries paid in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Raw material used	\$572,303 63	\$564,020 44	— \$8,283 19	1.45
Other material used	129,405 19	128,192 65	— 1,212 54	0.94
Wages	509,242 19	490,613 59	— 18,628 60	3.66
Salaries	114,746 57	113,584 39	— 1,162 18	1.01
Profit and minor expense.....	290,695 63	291,581 06	+ 884 43	0.30
Goods made and work done..	\$1,616,394 21	\$1,587,992 13	— \$28,402 03	1.76

TABLE IIIB—ANALYSIS OF TABLE IIIA.

Classification.	1904	1905.
Goods made and work done (gross product).....	\$1,616,394 21	\$1,587,992 13
Value of stock used and material consumed in pro- duction	701,708 82	692,213 00
Industry product (gross production less value of stock and material)	914,685 39	895,779 04
Wages and salaries (Labor's direct share of product)	623,983 76	604,197 98
Profit and minor expense fund (industry product less wages)	290,696 63	291,581 06
Percentage of industry product paid in wages	Per cent. 69.22	Per cent. 67.45
Percentage of industry product devoted to profit and minor expenses	31.78	32.55

TABLE IV—AVERAGE CAPITAL, ETC., PER EMPLOYEE.

Classification.	Average capital, product and yearly earnings in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent.
Average capital per employee	\$1,473 25	\$1,594 07	+ \$120 82	8.20
Average product per employee	1,600 39	1,635 42	+ 35 03	2.19
Average yearly earnings	504 20	505 27	+ 1 07	0.21

TABLE V—RANGE OF EMPLOYMENT AND OF UNEMPLOYMENT

Months.	Total no. of persons employed in		Percentages of			
	1904.	1905.	Employment in		Unemployment in	
			1904.	1905.	1904.	1905.
January	1,060	958	97.97	93.19	2.03	6.81
February	1,076	938	99.45	91.25	0.55	8.75
March	1,082	945	100.—	91.93	.....	8.07
April	1,037	947	95.84	92.12	4.16	7.88
May	1,052	1,005	97.23	97.76	2.77	2.24
June	978	1,023	90.39	100.—	9.61	.....
July	820	911	75.78	88.62	24.22	11.38
August	890	939	82.25	91.34	17.75	8.66
September	1,021	925	94.36	89.98	5.64	10.02
October	1,042	1,026	96.30	99.81	3.70	0.19
November	1,038	1,014	95.93	98.64	4.07	1.36
December	1,026	1,015	94.82	98.74	5.18	1.26
Average	1,010	971	93.35	94.46	6.65	5.54

TABLE VI—OCCUPATIONS AND WAGES OF EMPLOYEES.

Occupations.	Total no. of persons.		Average hours per day.		Average wages per day.		Average wages per hour.		Increase, +, or decrease, —, per day in 1905.	
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	Amt.	Per ct.
Apprentices	8	.....	10	.....	\$ .967	.....	\$ .097	.....	.....	.....
Bandsawyers	2	.....	10	.....	1.800	.....	.180	.....	.....	.....
Blacksmiths	1	4	10	10	1.500	\$1.875	.150	\$.187	+ .375	.25
Cabinetmakers	15	201	9.57	10	2.194	2.014	.240	.201	— .180	8.47
Carpenters	125	96	9.74	9.72	1.949	2.137	.200	.22	— .312	41.63
Carvers	28	20	9.02	9.95	2.674	2.998	.267	.301	+ .324	12.11
Clerks	2	3	10	10	1.875	1.917	.187	.193	+ .042	2.24
Crofters	10	.....	10	10	1.290	.....	.129	.....	.....	.....
Drillers	2	8	10	10	.817	1.700	.082	.170	+ .883	108.03
Engineers	5	5	9.60	10	2.550	2.716	.266	.272	+ .168	6.51
Filers	1	1	10	10	2.000	2.000	.200	.200	.....	.....
Finishers	115	128	9.77	9.94	1.725	1.769	.176	.177	+ .044	2.55
Firemen	4	6	10	10	1.737	1.718	.174	.173	+ .019	1.09
Fitters	15	5	10	10	1.407	1.450	.141	.145	+ .043	3.05
Foremen	8	14	10	10	2.694	2.823	.269	.283	+ .135	5.01
Gluers	11	16	10	10	1.386	1.319	.138	.132	— .067	4.11
Grinders	4	8	10	10	1.500	1.700	.150	.170	+ .200	13.33
Helpers	141	122	9.81	9.96	.903	.995	.921	.999	+ .092	10.19
Helpers, female .....	.....	1	.....	10	.....	.830	.....	.083	.....	.....
Inspectors .....	.....	2	.....	10	.....	2.050	.....	.205	.....	.....
Laborers	123	57	9.18	10	1.522	1.536	.166	.154	+ .014	.92
Machine operators	173	137	9.33	9.96	1.723	1.754	.179	.177	+ .031	1.85
Machine operators' helpers	2	.....	10	.....	.710	.....	.071	.....	.....	.....
Machinists	21	25	9.67	9.96	2.018	1.979	.209	.199	— .031	1.93
Melters .....	.....	8	.....	10	.....	1.750	.....	.175	.....	.....
Metal workers	19	19	10	10	1.679	1.531	.168	.152	— .158	9.41
Millwrights	1	.....	10	.....	3.250	.....	.325	.....	.....	.....
Molders	59	52	9.66	10	2.708	2.750	.279	.275	+ .04	1.75
Molders .....	.....	2	.....	10	.....	1.500	.....	.150	.....	.....
Molders .....	.....	8	.....	10	.....	2.750	.....	.275	.....	.....
Organmakers .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Packers	13	31	10	10	1.354	1.309	.135	.131	— .045	3.32
Painters	4	19	10	10	2.050	1.892	.205	.189	— .158	7.77
Patternmakers .....	.....	2	.....	10	.....	3.250	.....	.325	.....	.....
Platers	1	5	10	10	2.250	1.400	.225	.140	— .850	37.78
Polishers	1	15	10	10	2.000	1.773	.200	.177	— .227	11.35
Scalers	1	.....	10	.....	2.000	.....	.200	.....	.....	.....
Shopmen .....	.....	17	.....	10	.....	1.741	.....	.174	.....	.....
Stoncutters	2	3	10	10	3.000	3.466	.300	.347	+ .466	15.53
Teamsters	10	12	9.90	9.92	1.639	1.636	.171	.170	— .003	.18
Trimmers	7	4	10	10	2.500	1.500	.250	.150	— 1.000	40.00
Turners .....	.....	2	.....	10	.....	2.250	.....	.225	.....	.....
Upholsterers	1	6	10	10	1.650	2.167	.171	.217	+ .517	31.38
Watchmen	7	8	10.85	10.75	1.404	1.469	.135	.157	+ .005	3.42
Total and average	1,085	1,052	9.66	9.96	\$1,776	\$1,810	\$.185	\$.183	+ \$.034	1.91

TABLE VII—CLASSIFICATION OF DAILY WAGES.

Classified daily wages, (inclusive).	Total number of persons employed.						Average wages per day.					
	Male.		Female.		Total.		Male.		Female.		Total.	
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.
\$.50 to \$.58.	20	4	.....	.....	20	4	\$.50	\$.52	.....	.....	\$.50	\$.52
.59 to .66.	24	18	.....	.....	24	18	.617	.60	.....	.....	.617	.60
.67 to .74.	6	9	.....	.....	6	9	.695	.671	.....	.....	.695	.671
.75 to .83.	37	54	.....	1	37	55	.770	.771	.....	.83	.770	.771
.84 to .91.	7	15	.....	.....	7	15	.864	.897	.....	.....	.864	.897
1.00 to 1.08.	35	11	.....	.....	35	11	1.00	1.00	.....	.....	1.00	1.00
1.09 to 1.16.	1	7	.....	.....	1	7	1.10	1.15	.....	.....	1.10	1.15
1.17 to 1.24.	1	4	.....	.....	1	4	1.20	1.185	.....	.....	1.20	1.185
1.25 to 1.33.	85	73	.....	.....	85	73	1.244	1.253	.....	.....	1.244	1.253
1.34 to 1.41.	82	97	.....	.....	82	97	1.354	1.356	.....	.....	1.354	1.356
1.42 to 1.49.	1	2	.....	.....	1	2	1.45	1.45	.....	.....	1.45	1.45
1.50 to 1.58.	193	136	.....	.....	193	136	1.500	1.501	.....	.....	1.500	1.501
1.59 to 1.66.	31	36	.....	.....	31	36	1.63	1.632	.....	.....	1.63	1.632
1.67 to 1.74.	2	19	.....	.....	2	19	1.67	1.695	.....	.....	1.67	1.695
1.75 to 1.83.	127	109	.....	.....	127	109	1.753	1.755	.....	.....	1.753	1.755
1.84 to 1.91.	26	23	.....	.....	26	23	1.874	1.863	.....	.....	1.874	1.863
2.00 to 2.08.	119	121	.....	.....	119	121	2.00	2.00	.....	.....	2.00	2.00
2.09 to 2.16.	10	8	.....	.....	10	8	2.131	2.12	.....	.....	2.131	2.12
2.17 to 2.24.	14	23	.....	.....	14	23	2.20	2.20	.....	.....	2.20	2.20
2.25 to 2.33.	46	70	.....	.....	46	70	2.255	2.253	.....	.....	2.255	2.253
2.34 to 2.41.	28	20	.....	.....	28	20	2.333	2.330	.....	.....	2.333	2.330
2.50 to 2.58.	78	59	.....	.....	78	59	2.50	2.50	.....	.....	2.50	2.50
2.59 to 2.66.	11	26	.....	.....	11	26	2.626	2.608	.....	.....	2.626	2.608
2.67 to 2.74.	.....	2	.....	.....	.....	2	.....	2.70	.....	.....	.....	2.70
2.75 to 2.83.	24	54	.....	.....	24	54	2.75	2.75	.....	.....	2.75	2.75
2.84 to 2.91.	48	4	.....	.....	48	4	2.855	2.885	.....	.....	2.855	2.885
3.00 to 3.08.	16	23	.....	.....	16	23	3.00	3.00	.....	.....	3.00	3.00
3.25 to 3.33.	6	9	.....	.....	6	9	3.253	3.259	.....	.....	3.253	3.259
3.34 to 3.41.	1	3	.....	.....	1	3	3.33	3.373	.....	.....	3.33	3.373
3.50 to 3.58.	2	5	.....	.....	2	5	3.50	3.50	.....	.....	3.50	3.50
3.75 to 3.83.	2	1	.....	.....	2	1	3.75	3.75	.....	.....	3.75	3.75
4.00 to 4.08.	.....	2	.....	.....	.....	2	.....	4.00	.....	.....	.....	4.00
5.00 to 5.08.	.....	1	.....	.....	.....	1	.....	5.00	.....	.....	.....	5.00
7.50 to 7.58.	1	1	.....	.....	1	1	7.50	7.50	.....	.....	7.50	7.50
Total and av.	1,085	1,051	.....	1	1,085	1,052	\$1.776	\$1.811	.....	\$.83	\$1.77	\$1.81

Remarks.—In spite of an average increase of 4 per cent. in all items of investment this industry experienced a slight loss in 1905. While the exact cause of this cannot be ascertained, it is probable that the decrease of 4 per cent. in the number of employees was due to the higher wages offered in other industries of the same general character. This seems the more likely from the fact that the three classes of workmen in which this industry suffered the greatest decrease in 1905—namely carpenters, machine operators, and general laborers— were especially in demand in that year. The decrease in the amount of materials used, the total wages and salaries paid, and the output, all followed naturally upon the decrease in the number of employees.

There was, however, an increase of nearly 2 per cent. in the average daily wages of employees. Labor's share of the industry product was large—68 per cent. in 1904 and 67 per cent. in 1905. No female help was employed in this industry, with the exception of one person who worked as general helper in 1905.

37. PAPER AND PULP—27 ESTABLISHMENTS.

TABLE I—MANAGEMENT AND OPERATION.

Classification.	Number in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Number of private firms				
Number of male partners				
Number of female partners				
Total number of partners				
Number of corporations	27	27		
Number of male stockholders.....	2,075	2,077	+ 2	0.10
Number of female stockholders.....	80	93	+ 13	16.25
Total number of stockholders	2,155	2,170	+ 15	0.70
Total number of partners and stockholders..	2,155	2,170	+ 15	0.70
Smallest number of persons employed	3,873	3,602	+ 229	6.79
Greatest number of persons employed	3,770	3,748	— 22	0.58
Average number of persons employed	3,566	3,659	+ 93	2.61
Average days in operation	490	521	+ 31	6.33

TABLE II—INVESTMENT.

Classification.	Capital invested in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Land	\$1,276,326 28	\$1,376,707 00	+ \$99,880 72	7.82
Buildings and fixtures	2,366,401 84	2,494,575 19	+ 128,173 85	5.42
Machinery, etc.,	4,477,328 95	4,406,118 62	— 71,210 33	1.59
Cash and other capital	2,180,515 15	2,526,681 83	+ 346,166 68	15.88
Total	\$10,301,071 72	\$10,804,082 64	+ \$503,010 92	4.88

TABLE III A—VALUE OF MATERIALS AND LABOR EMPLOYED, AND OF PRODUCT.

Classification.	Value of material used, wages and salaries paid in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent.
Raw material used	\$6,289,408 25	\$6,454,460 78	+ \$165,052 53	2.62
Other material used	1,550,523 33	1,642,130 25	+ 91,606 92	5.91
Wages	1,659,348 20	1,718,605 34	+ 59,257 14	3.57
Salaries	247,286 85	243,607 10	+ 1,320 25	0.53
Profit and minor expenses ...	1,179,826 18	1,218,545 34	+ 38,719 16	3.28
Goods made and work done	11,926 392 81	11,282,348 81	+ 355,956 00	3.26

TABLE III B—ANALYSIS OF TABLE III A.

Classification.	1904.	1905.
Value of goods made and work done (gross product)	\$10,926,392 81	\$11,282,348 81
Value of stock used and material consumed in production	7,839 931 58	8,066,591 03
Industry product (gross production less value of stock and material)	3,086,461 23	3,185,757 78
Wages and salaries (Labor's direct share of product)	1,906,635 05	1,997,212 44
Profit and minor expense fund (industry product less wages)	1,179,826 18	1,218,545 34
	Per cent.	Per cent.
Percentage of industry product paid in wages	61.77	61.12
Percentage of industry product devoted to profit and minor expenses	38.23	38.88

TABLE IV—AVERAGE CAPITAL, ETC., PER EMPLOYEE.

Classification.	Average capital, product and yearly earnings in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent.
Average capital per employee	\$2,888 69	\$2,952 74	+ \$64 05	2.22
Average product per employee	3,066 85	3,083 45	+ 16 60	0.54
Average yearly earnings	465 32	469 69	+ 4.37	0.94

TABLE V—RANGE OF EMPLOYMENT AND OF UNEMPLOYMENT.

Months.	Total no. of persons employed in		Percentage of			
			Employment in		Unemployment in	
	1904.	1905.	1904.	1905.	1904.	1905.
January	3,373	3,657	89.47	97.57	10.53	2.43
February	3,377	3,647	89.58	97.31	10.42	2.69
March	3,467	3,748	91.96	100.—	8.04	.....
April	3,468	3,733	91.99	99.60	8.01	0.40
May	3,728	3,683	98.89	97.73	1.11	2.27
June	3,540	3,616	98.90	96.48	6.10	3.52
July	3,566	3,602	94.59	96.10	5.41	3.90
August	3,740	3,652	99.20	97.44	0.80	2.56
September	3,770	3,624	100.—	96.69	.....	3.31
October	3,500	3,624	92.84	96.69	7.16	3.31
November	3,642	3,676	96.61	98.08	3.39	1.92
December	3,616	3,670	95.92	97.92	4.08	2.08
Average	3,566	3,659	94.59	96.51	5.41	3.49

TABLE VI—OCCUPATIONS AND WAGES OF EMPLOYEES.

Occupations.	Total no. of persons.		Average hours per day.		Average wages per day.		Average wages per hour.		Increase, +, or decrease, —, per day in 1905.	
	1904.	1905.	1904.	1905.	1901.	1905.	1904.	1905.	Amt.	Per ct.
Acid men	8	11	11.5	10.73	\$1.75	\$1.78	\$.153	\$.166	+ \$.03	1.72
Acid men's helpers ..	2	4	10	11	1.50	1.50	.150	.136	.....	.....
Back tenders	32	35	11.25	11.54	1.838	1.887	.163	.164	+ .009	2.67
Back tenders' helpers	4	48	.....	11.92	.....	1.320	.....	.111	.....	.....
Balers	4	11	10	10	2.00	2.00	.200	.200	.....	.....
Barkers	19	36	10	10	1.516	1.766	.152	.177	+ .250	16.42
Beater men	53	58	10.94	11.66	1.733	1.867	.158	.160	+ .134	7.73
Beater men's helpers ..	50	47	11.72	11.11	1.585	1.618	.135	.146	+ .033	2.06
Blacksmiths	6	9	10	10	1.95	2.12	.195	.212	+ .17	3.72
Blenchers	6	3	9.8	9	1.46	1.65	.149	.133	+ .19	13.01
Blenchers' helpers	6	4	10	9.5	1.30	1.838	.130	.146	+ .088	6.77
Blowpit tenders	6	4	12	10	1.208	1.25	.101	.125	+ .042	3.43
Boys	39	39	9.18	9.90	.836	.929	.091	.094	+ .093	1.11
Calenders	20	35	11.2	11.37	1.898	1.75	.160	.154	+ .148	7.80
Calenders, female	32	30	10	10	1.25	1.25	.125	.125	.....	.....
Calenders' helpers	22	14	10.36	10.57	1.438	1.436	.139	.141	+ .048	3.34
Carpenters	12	22	10	10	1.958	2.259	.196	.226	+ .301	15.37
Casemakers	2	1	10	10	1.625	1.50	.163	.150	+ .125	7.69
Cooks	18	18	11.56	11.56	2.213	2.316	.192	.200	+ .103	4.65
Cooks' helpers	6	12	12	12	1.80	1.60	.15	.133	+ .20	12.22
Coremakers	2	.....	10	.....	.375	.....	.038	.....	.....	.....
Counters, female	24	25	9.92	10	1.075	1.106	.108	.111	+ .031	2.88
Cutters	10	8	10.10	9.75	1.715	1.706	.170	.185	+ .009	.53
Cutters, female	48	56	10.13	9.67	.827	.868	.081	.09	+ .041	4.96
Cutters' helpers	5	2	10	10	1.410	1.50	.141	.150	+ .09	6.38
Draymen	1	1	10	10	1.50	1.50	.150	.150	.....	.....
Dusters, female	2	2	9.5	10	.87	.75	.092	.075	+ .12	13.79
Electricians	5	5	10.80	11.60	2.00	2.144	.185	.185	+ .144	7.20
Engineers	66	66	11.23	11.21	2.467	2.535	.220	.226	+ .068	2.76
Engineers' helpers .....	.....	79	.....	10.94	.....	1.066	.....	.159	.....	.....
Finishers	76	120	9.79	10.03	1.639	1.627	.166	.161	+ .012	7.73
Finishers, female	68	107	9.84	9.93	.915	.860	.093	.087	+ .055	6.01
Finishers' helpers .....	.....	7	.....	11.14	.....	1.229	.....	.11	.....	.....

TABLE VI—OCCUPATIONS AND WAGES OF EMPLOYEES.—Continued.

Occupations.	Total no. of persons.		Average hours per day.		Average wages per day.		Average wages per hour.		Increase, +, or decrease, —, per day in 1905.		
	1904.	1905	1904.	1905.	1904.	1905.	1904.	1905.	Amt.	Per ct.	
Firemen	141	141	10.97	10.78	1.841	1.864	.171	.173	+	.023	1.25
Firemen's helpers ..	24	19	10.08	10.58	1.769	1.762	.175	.166	—	.007	.40
Foremen	44	43	10.41	10.47	2.489	2.543	.239	.243	+	.058	2.33
Grinders	45	51	11.24	11.71	1.638	1.67	.146	.143	+	.032	1.95
Helpers	264	42	10.68	10.71	1.461	1.288	.137	.120	—	.175	11.98
Inspectors, female ..	3	5	10	10	1.00	1.00	.100	.100	.....	.....	.....
Joggers	2	3	10	10	1.25	1.717	.125	.172	+	.467	37.36
Laborers	1,404	1,228	10.35	10.21	1.543	1.529	.149	.149	—	.014	.91
Loaders	19	10	10	10	1.532	.....	.153	.....	.....	.....	.....
Loftmen	15	15	9.8	9.27	1.95	1.817	.199	.196	—	.133	6.82
Machine tenders	251	251	11.70	10.61	2.184	2.353	.187	.222	+	.169	7.74
Machine tenders, fe- male	49	45	10	10	.794	.85	.079	.085	+	.056	7.05
Machine tenders' help- ers	27	135	10	11.32	1.484	1.48	.148	.148	—	.004	.27
Machinists	30	21	10	10	2.487	2.414	.249	.241	—	.073	2.94
Machinists' helpers ..	3	10	10	10	1.50	.....	.150	.....	.....	.....	.....
Masons	2	1	10	10	2.25	2.50	.225	.250	+	.25	11.11
Millwrights	53	62	10	10	2.556	2.572	.256	.257	+	.016	.63
Millwrights' helpers..	6	2	10	10	2.042	2.125	.204	.213	+	.083	4.11
Oilers	19	26	11.47	11.19	1.426	1.542	.124	.137	+	.116	8.13
Packers	14	11	10	10	1.669	1.662	.167	.166	—	.007	.42
Painters	1	3	10	10	2.00	1.917	.200	.192	—	.083	4.15
Pasters, female	2	10	10	10	.50	.....	.05	.180	.....	.....	.....
Pipefitters	8	14	10	10	2.063	1.804	.206	.154	—	.259	12.55
Porters	15	4	10	10	1.44	1.537	.144	.154	+	.097	6.60
Press feeders	13	20	10.62	12	1.577	2.10	.49	.175	+	.523	33.16
Printers	2	2	10	10	1.235	2.425	.235	.243	+	.600	32.32
Printers, female	1	1	10	10	.....	.125	.....	.125	.....	.....	.....
Ragcutters	6	16	10.33	10.33	1.845	1.629	.179	.157	—	.216	1.17
Ragcutters, female ..	398	347	9.64	9.68	.916	.902	.095	.093	—	.014	1.53
Ragcutters' helpers ..	4	4	11	11	1.75	1.75	.175	.159	.....	.....	.....
Ragsorters	22	6	10	10	1.464	1.468	.146	.147	+	.004	.27
Rag-room men	1	10	10	10	2.00	.....	.200	.....	.....	.....	.....
Ragwashers	16	2	10.75	12	1.555	1.63	.147	.163	+	.045	2.82
Rewinders	4	8	10	10.5	1.375	1.83	.138	.177	+	.485	35.35
Rulers	2	2	10	10	3.25	2.875	.325	.288	—	.475	14.62
Rulers' helpers	3	3	10	10	1.333	1.33	.133	.133	.....	.....	.....
Rulers' helpers, fe- male	2	2	10	10	1.00	1.00	.10	.10	.....	.....	.....
Sawyers	18	18	10	10	2.118	1.691	.212	.169	—	.427	20.16
Scalers	7	9	10	10	1.544	1.666	.154	.167	+	.122	7.90
Scalers, female	6	4	10	10	.892	.913	.089	.091	+	.021	2.36
Screen men	10	4	11.2	11	1.35	1.445	.121	.131	+	.095	7.04
Shippers	2	11	10	10.09	1.75	1.81	.175	.179	+	.06	3.43
Sizemakers	11	20	10	10	1.709	1.688	.171	.169	—	.021	1.23
Skinners	46	62	11.11	10.15	1.121	1.211	.101	.119	+	.690	8.03
Splitters	5	5	10	10	1.44	1.42	.144	.142	—	.02	1.39
Stockkeepers	2	4	12	12	1.75	1.65	.146	.138	—	.10	5.71
Sweepers	1	6	10	10	1.40	1.275	.140	.128	—	.125	8.93
Teamsters	14	19	10	10	1.643	1.634	.164	.166	+	.021	1.22
Testers	6	2	12	12	.....	1.865	.....	.155	.....	.....	.....
Tiers	3	11.33	10	10	1.183	1.75	.104	.175	+	.637	5.64
Timekeepers	1	10	10	10	.....	1.50	.....	.150	.....	.....	.....
Trimmers	6	9	10	10	1.858	1.911	.186	.191	+	.053	2.85
Truckers	2	2	10	10	1.65	1.50	.138	.150	—	.15	9.10
Watchmen	15	18	11.67	11.61	1.723	1.167	.148	.101	—	.566	.....
Weighers	1	10	10	10	.....	1.50	.....	.150	.....	.....	.....
Wipers	1	10	10	10	.....	1.25	.....	.125	.....	.....	.....
Woodpilers	10	9	10	10	1.415	1.60	.143	.160	+	.182	13.08
Yardmen	18	42	10	10	1.428	1.59	.143	.159	+	.162	11.33
Total and av.	3,814	3,700	10.45	10.35	\$1.549	\$1.577	\$.148	\$.152	+	\$.022	1.81

TABLE VII—CLASSIFICATION OF DAILY WAGES.

Classified daily wages, (inclusive).	Total number of persons employed.						Average wages per day.					
	Male.		Female.		Total.		Male.		Female.		Total.	
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.
\$.50 to .58.	2	.....	2	.....	4	.....	\$.50	.....	\$.50	.....	\$.50	.....
.59 to .66.	2	3	5	5	7	8	.65	.....	.65	.65	.65	.65
.67 to .74.	.....	11	11	11	11	11	.....	.678	.67	.678	.67	.67
.75 to .83.	45	52	252	225	297	277	.75	.762	.774	.764	.771	.763
.84 to .91.	11	4	111	144	122	148	.863	.865	.856	.858	.857	.858
.92 to .99.	.....	2	.....	5	.....	7	.....	.98	.....	.95	.....	.959
1.00 to 1.08.	94	74	99	127	192	201	1.00	1.00	1.00	1.003	1.00	1.002
1.09 to 1.16.	46	32	91	31	137	63	1.107	1.122	1.104	1.119	1.105	1.120
1.17 to 1.24.	12	6	.....	9	12	15	1.196	1.20	.....	1.20	1.196	1.190
1.25 to 1.35.	127	138	47	53	174	191	1.25	1.251	1.25	1.253	1.25	1.252
1.34 to 1.41.	224	116	.....	6	224	122	1.371	1.375	.....	1.35	1.371	1.374
1.41 to 1.49.	133	46	.....	1	133	47	1.453	1.448	.....	1.45	1.453	1.45
1.50 to 1.58.	1,019	1,113	14	6	1,033	1,119	1.50	1.50	1.517	1.517	1.50	1.50
1.59 to 1.66.	303	285.	1	.....	304	285	1.616	1.628	1.60	.....	1.616	1.628
1.67 to 1.74.	187	95	.....	1	187	96	1.70	1.701	.....	1.70	1.70	1.701
1.75 to 1.83.	320	434	.....	.....	320	434	1.765	1.754	.....	.....	1.765	1.754
1.84 to 1.91.	112	35	.....	.....	112	35	1.859	1.869	.....	.....	1.859	1.869
1.92 to 1.99.	13	32	.....	.....	13	32	1.927	1.944	.....	.....	1.927	1.944
2.00 to 2.08.	170	214	1	.....	171	214	2.004	2.002	2.00	.....	2.003	2.002
2.09 to 2.16.	20	51	.....	.....	20	51	2.119	2.113	.....	.....	2.119	2.113
2.17 to 2.24.	18	10	.....	.....	18	10	2.186	2.203	.....	.....	2.186	2.203
2.25 to 2.33.	49	56	.....	.....	49	56	2.255	2.255	.....	.....	2.255	2.255
2.34 to 2.41.	13	13	.....	.....	13	13	2.40	2.387	.....	.....	2.40	2.387
2.42 to 2.49.	4	3	.....	.....	4	3	2.475	2.48	.....	.....	2.475	2.48
2.50 to 2.58.	94	77	.....	.....	94	77	2.50	2.503	.....	.....	2.50	2.503
2.59 to 2.66.	6	13	.....	.....	6	13	2.60	2.604	.....	.....	2.60	2.604
2.67 to 2.74.	3	2	.....	.....	3	2	2.67	2.67	.....	.....	2.67	2.67
2.75 to 2.83.	20	23	.....	.....	20	23	2.75	2.75	.....	.....	2.75	2.75
2.84 to 2.91.	.....	1	.....	.....	.....	1	.....	2.88	.....	.....	.....	2.88
3.00 to 3.08.	66	51	.....	.....	66	51	3.00	3.00	.....	.....	3.00	3.00
3.09 to 3.16.	2	2	.....	.....	2	2	3.10	3.10	.....	.....	3.10	3.10
3.17 to 3.24.	1	.....	.....	.....	1	.....	.....	3.20	.....	.....	.....	3.20
3.25 to 3.33.	10	18	.....	.....	10	18	3.29	3.277	.....	.....	3.29	3.277
3.34 to 3.41.	4	4	.....	.....	4	4	3.40	3.40	.....	.....	3.40	3.40
3.42 to 3.49.	.....	9	.....	.....	.....	9	.....	3.45	.....	.....	.....	3.45
3.50 to 3.58.	28	29	.....	.....	28	29	3.503	3.50	.....	.....	3.503	3.50
3.59 to 3.66.	6	4	.....	.....	6	4	3.60	3.60	.....	.....	3.60	3.60
3.75 to 3.83.	7	5	.....	.....	7	5	3.75	3.75	.....	.....	3.75	3.75
3.84 to 3.91.	3	8	.....	.....	3	8	3.90	3.90	.....	.....	3.90	3.90
4.00 to 4.08.	3	4	.....	.....	3	4	4.00	4.00	.....	.....	4.00	4.00
4.17 to 4.24.	1	1	.....	.....	1	1	4.17	4.17	.....	.....	4.17	4.17
4.25 to 4.33.	.....	1	.....	.....	.....	1	.....	4.25	.....	.....	.....	4.25
4.59 to 4.66.	1	1	.....	.....	1	1	4.66	4.66	.....	.....	4.66	4.66
5.00 to 5.08.	1	1	.....	.....	1	1	5.00	5.00	.....	.....	5.00	5.00
5.34 to 5.41.	.....	1	.....	.....	.....	1	.....	5.40	.....	.....	.....	5.40
5.50 to 5.58.	.....	1	.....	.....	.....	1	.....	5.58	.....	.....	.....	5.58
7.00 to 7.08.	.....	1	.....	.....	.....	1	.....	7.00	.....	.....	.....	7.00
Total and average	3,180	3,076	634	624	3,814	3,700	\$1.674	\$1.711	\$.922	\$.914	\$1.549	\$1.577

Remarks.—The manufacture of paper and pulp has for years been one of the most important industries of the state. The census of 1900 gave Wisconsin fifth rank among the states in this industry. In that year Wisconsin produced over 8 per cent. of the total product of the United States. The reports for 1904

and 1905 show a continued growth of the industry in this state. There was an increase for 1905 in nearly every item of investment, the total capital invested showing a gain of 5 per cent.; about 3 per cent. more persons were employed, while there was an increase of 6 per cent. in the number of days of operation, of from 1 per cent. to 6 per cent. in the materials used and the wages and salaries paid, and of 3 per cent. in the output. The number of days of operation, 490 in 1904 and 521 in 1905, indicates that both day and night shifts were employed. Labor's share of the industry product was large—62 per cent. in 1904 and 61 per cent. in 1905. Employment was very regular each year. The hours of labor were exceptionally long, averaging 10.45 per day in 1904 and 10.35 in 1905. About $\frac{1}{6}$ of the total number of employees were females. They were employed chiefly in occupations peculiar to the industry. Their hours of labor were much shorter than those of male operatives, averaging 9.76 per day in 1904 and 9.78 in 1905. Their average daily wages were somewhat higher than the average for women in all industries. Men's daily wages, on the contrary, were much lower in this industry than the average.

38. SADDLERY—8 ESTABLISHMENTS.

TABLE I—MANAGEMENT AND OPERATION.

Classification.	Number in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Number of private firms.....	3	3	.....	.....
Number of male partners.....	7	5	— 2	28.57
Number of female partners.....	1	1	.....	.....
Total number of partners.....	8	6	— 2	25.00
Number of corporations.....	5	5	.....	.....
Number of male stockholders.....	13	13	.....	.....
Number of female stockholders.....	5	5	.....	.....
Total number of stockholders.....	23	23	.....	.....
Total number of partners and stockholders..	31	29	— 2	3.45
Smallest number of persons employed.....	275	316	+ 41	14.91
Greatest number of persons employed.....	396	370	— 26	6.57
Average number of persons employed.....	344	344	.....	.....
Average days in operation.....	299	283	— 1	0.33

TABLE II—INVESTMENT.

Classification.	Capital invested in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Land	\$5,650 00	\$8,850 00	+ \$3,200 00	56.64
Buildings and fixtures	18,708 00	21,100 00	+ 2,392 00	12.79
Machinery, etc.	23,133 28	24,311 49	+ 1,178 21	5.07
Cash and other capital.....	122,323 28	142,441 71	+ 20,118 43	16.45
Total	\$169,819 56	\$196,703 20	+ \$26,883 64	15.83

TABLE III A—VALUE OF MATERIALS AND LABOR EMPLOYED, AND OF PRODUCT.

Classification.	Value of material used, wages and salaries paid in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Raw material used	\$384,337 98	\$494,672 02	+ \$110,334 04	28.71
Other material used	103,419 06	127,355 80	+ 23,936 80	23.15
Wages	142,562 10	152,124 11	+ 9,562 01	6.71
Salaries	36,794 76	36,354 00	— 440 76	1.20
Profit and minor expenses....	88,149 75	88,389 49	+ 239 74	0.27
Goods made and work done..	\$755,263 59	\$898,895 42	+ \$143,631 83	19.02

TABLE III B—ANALYSIS OF TABLE III A.

Classification.	1904.	1905.
Value of goods made and work done (gross product)	\$755,263 59	\$898,895 42
Value of stock used and other material consumed in production	487,756 98	622,027 82
Industry product (gross product less value of stock and material)	267,506 61	276,867 60
Wages and salaries (Labor's direct share of product)	179,356 86	188,478 11
Profit and minor expense fund (industry product less wages)	88,149 75	88,389 49
	Per cent.	Per cent.
Percentage of industry product paid in wages.....	67.05	68.08
Percentage of industry product devoted to profit and minor expenses	32.95	31.92

TABLE IV—AVERAGE CAPITAL ETC., PER EMPLOYEE.

Classification.	Average capital, product and yearly earnings in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent.
Average capital per employee.....	\$493 66	\$573 15	+ \$78 49	15.90
Average product per employee.....	2,195 53	2,613 08	+ 417 55	19.46
Average yearly earnings.....	414 42	442 22	+ 27 80	6.71

TABLE V—RANGE OF EMPLOYMENT AND OF UNEMPLOYMENT.

Months.	Total no. of persons employed in		Percentages of			
	1904.	1905.	Employment in		Unemployment in	
			1904.	1905.	1904.	1905.
January	364	343	91.92	94.06	8.08	5.94
February	368	364	92.93	98.38	7.07	1.62
March	396	357	100.—	96.49	.....	3.51
April	375	355	94.70	95.95	5.30	4.05
May	332	340	96.46	91.89	3.54	8.11
June	337	329	85.10	88.92	14.90	11.08
July	318	321	80.30	86.76	19.70	13.24
August	275	316	69.44	85.41	30.56	14.59
September	291	339	73.48	91.62	26.52	8.33
October	332	336	83.84	90.81	16.16	9.19
November	340	350	85.86	94.60	14.14	5.40
December	350	370	83.38	100.—	11.62	.....
Average	344	344	86.87	92.97	13.13	7.03

TABLE VI—OCCUPATIONS AND WAGES OF EMPLOYEES.

Occupations.	Total no. of persons.		Average hours per day.		Average wages per day.		Average wages per hour.		Increase, +, or decrease, - per day in 1905.	
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	Amt.	Per ct.
Boot makers	1	10			\$1.50		\$1.50			
Collar makers	12	4	10	10	2.239	\$1.875	.227	\$.188	-.394	17.37
Cutters	13	5	10	10	2.303	2.90	.281	.290	+.092	3.24
Engineers	1	1	10	10	2.17	2.17	.217	.217		
Firemen		1		10		1.67		.167		
Fitters		12		10		2.284		.228		
Foremen	3	10			3.03		.303			
Harness makers	134	115	10	10	1.896	2.265	.190	.227	+.369	19.46
Harness makers, female	1	10	10	10	1.170	1.325	.117	.163	+.455	38.89
Helpers	15	15	10	10	1.055	1.055	.106	.106		
Helpers, female		5		10		.83		.083		
Laborers	23	24	10	10	.807	.869	.081	.087	+.062	7.68
Machine operators ..	8	10	10	10	2.312	2.50	.231	.250	+.188	8.10
Machine operators, female	11	3	10	10	1.346	.937	.135	.094	-.409	30.39
Machinists	3	6	10	10	2.39	2.237	.239	.224	-.153	6.40
Net makers	11	57	10	10	1.795	1.124	.180	.112	-.671	37.38
Net makers, female..	68	68	10	10	.925	.935	.093	.094	+.01	1.08
Pad makers, female..	4		10		.83		.083			
Piece workers	11	7	10	10	1.907	1.903	.191	.190	-.004	.021
Piece workers, female	65	25	10	10	.682	.752	.068	.075	+.07	10.26
Pressmen	1	4	10	10	1.88	2.062	.183	.206	+.232	12.63
Shipping clerks	2	2	10	10	1.795	1.795	.180	.180		
Spinners	6	5	10	10	1.667	1.72	.167	.172	+.053	3.13
Total and average	393	379	10	10	\$1.449	\$1.569	\$.145	\$.157	+.120	8.23

TABLE VII—CLASSIFICATION OF DAILY WAGES.

Classified daily wages (inclusive)	Total number of persons employed.						Average wages per day.					
	Male.		Female.		Total.		Male.		Female.		Total.	
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.
\$.50 to .58.	9	9	11	.....	20	9	\$.562	\$.562	\$.50	.....	\$.528	\$.562
.59 to .66.	.....	6	38	12	33	18	.....	\$.598	\$.65	\$.65	\$.65	\$.633
.67 to .74.	6	16	2	8	8	24	.67	.69	.67	.67	.67	.683
.75 to .83.	13	5	59	43	72	48	.799	.83	.821	.821	.817	.822
.84 to .91.	.....	2	.....	.....	.....	2	.....	.90	.....	.....	.....	.90
.92 to .99.	.....	4	.....	1	.....	5	.....	.92	.....	.92	.....	.92
1.00 to 1.09.	13	10	23	13	36	23	1.00	1.00	1.00	1.001	1.00	1.00
1.17 to 1.24.	15	2	11	1	26	3	1.17	1.17	1.17	1.17	1.17	1.17
1.25 to 1.33.	13	29	6	18	19	46	1.293	1.27	1.33	1.263	1.305	1.287
1.34 to 1.41.	.....	1	.....	.....	.....	1	.....	1.40	.....	.....	.....	1.40
1.42 to 1.49.	.....	5	.....	.....	.....	3	.....	1.42	.....	.....	.....	1.42
1.50 to 1.59.	22	25	4	5	26	30	1.504	1.503	1.50	1.50	1.504	1.503
1.59 to 1.66.	5	2	.....	.....	5	2	1.65	1.65	.....	.....	1.65	1.65
1.67 to 1.74.	28	9	.....	.....	29	9	1.67	1.67	.....	.....	1.67	1.67
1.75 to 1.83.	13	19	.....	5	13	24	1.812	1.770	.....	1.75	1.812	1.771
1.84 to 1.91.	.....	4	.....	.....	.....	4	.....	1.85	.....	.....	.....	1.85
1.92 to 1.99.	1	1	.....	.....	1	1	1.92	1.92	.....	.....	1.92	1.92
2.00 to 2.08.	33	36	.....	.....	33	36	2.00	2.00	.....	.....	2.00	2.00
2.17 to 2.24.	5	2	.....	.....	5	2	2.132	2.17	.....	.....	2.132	2.17
2.25 to 2.33.	8	17	.....	.....	8	17	2.26	2.259	.....	.....	2.26	2.259
2.50 to 2.58.	36	26	.....	.....	36	26	2.50	2.50	.....	.....	2.50	2.50
2.67 to 2.74.	.....	1	.....	.....	.....	1	.....	2.67	.....	.....	.....	2.67
2.75 to 2.83.	6	16	.....	.....	6	16	2.75	2.755	.....	.....	2.75	2.755
3.00 to 3.08.	8	14	.....	.....	8	14	3.00	3.00	.....	.....	3.00	3.00
3.25 to 3.33.	5	5	.....	.....	5	5	3.33	3.33	.....	.....	3.33	3.33
3.50 to 3.58.	1	.....	.....	.....	1	.....	3.50	.....	.....	.....	3.50	.....
3.67 to 3.74.	1	.....	.....	.....	1	.....	3.67	.....	.....	.....	3.67	.....
3.75 to 3.83.	.....	2	.....	.....	.....	2	.....	3.75	.....	.....	.....	3.75
4.00 to 4.08.	.....	1	.....	.....	.....	1	.....	4.00	.....	.....	.....	4.00
4.17 to 4.24.	2	2	.....	.....	2	2	4.17	4.17	.....	.....	4.17	4.17
5.00 to 5.08.	1	.....	.....	.....	1	.....	5.00	.....	.....	.....	5.00	.....
Total and average	244	268	149	111	393	379	\$1.816	\$1.817	\$.849	\$.97	\$1.449	\$1.569

Remarks.—Although Wisconsin ranks first among the states in the production of harness leather only a few large harness manufacturing establishments are located in the state. There are however a great many small shops, engaged chiefly in doing custom work and repairing. The number of all establishments in the state in 1900 was 525. The foregoing tables are based upon returns received from eight of the larger firms. The data do not necessarily indicate the actual state of the industry in Wisconsin. For the establishments which reported there was an increase in 1905 of 57 per cent. in the capital invested in land, and of 13 per cent. in the amount invested in buildings, indicating a greater permanency of the investment. The total capital invested showed an increase of 16 per cent. There was

also an increase of from 7 to 27 per cent. in the materials used, the total wages paid, and the output. Labor's share of the industry product was large—67 per cent. in 1904 and 68 per cent. in 1905. Employment was somewhat irregular each year, summer being the season of the least activity. In 1904 about one-third of the total number of employees were women. Their number decreased by about 25 per cent. in 1905. Their daily wages increased by about 15 per cent. With but few exceptions they were employed in occupations peculiar to the industry. All worked 10 hours per day.

39. SASH, DOORS, ETC.—38 ESTABLISHMENTS.

TABLE I—MANAGEMENT AND OPERATION.

Classification.	Number in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount	Per cent
Number of private firms.....	11	11		
Number of male partners.....	16	17	+ 1	6.25
Number of female partners.....				
Total number of partners.....	16	17	+ 1	6.25
Number of corporations.....	27	27		
Number of male stockholders.....	118	126	+ 8	6.78
Number of female stockholders.....	26	23	— 3	1 1.51
Total number of stockholders.....	144	149	+ 5	3.47
Total number of partners and stockholders..	160	168	+ 6	3.75
Smallest number of persons employed.....	2,039	2,085	+ 46	2.26
Greatest number of persons employed.....	2,400	2,553	+ 153	6.38
Average number of persons employed.....	2,281	2,429	+ 148	6.49
Average days in operation.....	289	291	+ 2	0.69

TABLE II—INVESTMENT.

Classification.	Capital invested in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Land.....	\$387,471 59	\$394,044 89	+ \$6,573 30	1.70
Buildings and fixtures.....	496,076 25	501,357 26	+ 5,281 01	1.06
Machinery, etc.....	519,127 52	522,806 14	+ 3,678 62	0.71
Cash and other capital.....	1,865,421 75	1,950,772 19	+ 85,350 44	4.58
Total.....	\$3,268,097 11	\$3,368,980 48	+\$100,883 37	3.09

TABLE III A—VALUE OF MATERIALS AND LABOR EMPLOYED, AND OF PRODUCT.

Classification.	Value of material used, wages and salaries paid in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Raw material used	\$2,291,344 30	\$2,605,793 54	+ \$404,449 24	17.65
Other material used.....	109,207 10	190,033 43	+ 80,826 33	74.01
Wages	994,789 07	1,059,445 53	+ 64,656 46	6.50
Salaries	227,619 67	228,167 65	+ 547 98	0.24
Profit and minor expense.....	1,031,612 87	1,097,645 72	+ 66,032 85	6.40
Goods made and work done..	\$4,654,573 01	\$5,271,085 87	+ \$616,512 86	13.25

TABLE III B—ANALYSIS OF TABLE III A.

Classification.	1904.	1905.
Value of goods made and work done (gross product)	\$4,654,573 01	\$5,271,085 87
Value of stock and other material consumed in production	2,400,551 40	2,885,826 97
Industry product (gross production less value of stock and material)	2,254,021 61	2,385,258 90
Wages and salaries (Labor's direct share of product)	1,222,408 74	1,287,613 18
Profit and minor expense fund (industry product less wages)	1,031,612 87	1,097,645 72
	Per cent.	Per cent.
Percentage of industry product paid in wages.....	54.23	53.98
Percentage of industry product devoted to profit and minor expenses	45.77	46.02

TABLE IV—AVERAGE CAPITAL, ETC., PER EMPLOYEE.

Classification.	Average capital, product and yearly earnings in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent.
Average capital per employee	\$1,432 75	\$1,336 98	— \$45 77	3.19
Average product per employee	2,040 58	2,170 06	+ 129 48	6.35
Average yearly earnings	436 12	436 17	+ 0.05	0.01

TABLE V—RANGE OF EMPLOYMENT AND OF UNEMPLOYMENT.

Months.	Total no. of persons employed in		Percentages of			
			Employment in		Unemployment in	
	1904.	1905.	1904.	1905.	1904.	1905.
January	2,039	2,085	84.96	81.67	15.04	18.33
February	2,142	2,291	89.25	89.74	10.75	10.26
March	2,303	2,374	95.96	92.99	4.04	7.01
April	2,278	2,467	94.92	96.63	5.08	3.37
May	2,295	2,398	95.63	93.93	4.37	6.07
June	2,274	2,468	94.75	96.67	5.25	3.33
July	2,254	2,464	93.92	96.51	6.08	3.49
August	2,301	2,455	95.88	96.16	4.12	3.84
September	2,387	2,543	99.23	99.61	0.77	0.39
October	2,400	2,553	100.00	100.00	.....	.....
November	2,379	2,534	99.12	99.26	0.88	0.74
December	2,323	2,514	96.79	98.47	3.21	1.53
Average	2,281	2,429	95.04	95.14	4.96	4.86

MANUFACTURING RETURNS, 1904-1905.

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TABLE VI—OCCUPATIONS AND WAGES OF EMPLOYEES.

Occupations.	Total no. of persons.		Average hours per day.		Average wages per day.		Average wages per hour.		Increase, +, or decrease, —, per day in 1905.	
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	Amt.	Per ct.
Bench hands	13	13	10	10	\$2.238	\$2.260	\$.224	\$.227	+ \$.081	1.39
Blacksmiths	1	2	10	10	2.00	1.875	.20	.188	— .125	6.25
Bookkeepers		1		10		1.50		.15		
Boxnallers		2		10		1.50		.15		
Boys	13	21	10	10	.746	.888	.075	.089	+ .142	19.03
Cabinetmakers	61	49	10	10	2.219	2.179	.222	.218	— .040	1.80
Carloaders	3	3	10	10	1.80	1.50	.18	.15	— .30	16.67
Carpenters	306	371	9.90	9.89	2.156	2.169	.218	.219	+ .013	.60
Carvers	3	4	10	10	2.50	2.463	.25	.246	— .037	1.48
Doormakers		21		10		1.737		.174		
Draftsmen	1		10		2.56		2.56			
Elevator men		1		10		1.37		.137		
Engineers	16	15	10.19	10.20	2.264	2.331	.222	.229	+ .067	2.96
Filers		4		10		1.938		.194		
Finishers	7	2	10	10	2.986	2.375	.297	.238	— .611	20.46
Firemen	26	23	10.35	10	1.636	1.577	.158	.158	— .059	3.61
Foremen	33	36	10	10	2.783	2.913	.278	.297	+ .13	4.67
Frame makers	4		10		2.063		.206			
Glaziers	13	17	10	10	1.966	1.859	.197	.186	— .107	5.44
Graders	4		10		1.50		.15			
Helpers	413	465	10	10	.902	1.029	.09	.103	+ .127	14.08
Helpers, female		3		10		1.00		.10		
Laborers	707	748	9.98	9.98	1.406	1.425	.141	.143	+ .019	1.32
Laborers, female		4		10		.85		.085		
Lumber pilers		5		10		1.50		.15		
Lumber sorters	10	11	10	10	1.80	1.832	.18	.183	+ .032	1.78
Machine tenders	530	479	10	9.99	1.773	1.777	.177	.178	+ .004	0.23
Machinists	91	129	10	10	2.106	2.155	.211	.216	+ .049	2.33
Masons	5	10	9.20	9	3.60	3.42	.391	.38	— .18	5.00
Mill hands	17	2	9.18	10	2.025	2.126	.201	.213	+ .10	4.94
Molding makers	2	2	10	10	2.00	2.00	.20	.20		
Nailers	1		10		1.50		.15			
Painters	34	46	10	9.85	1.691	1.752	.169	.178	+ .061	3.61
Plasterers		6		9		3.60		.40		
Rippers		4		10		1.78		.178		
Sash makers	3	22	10	10	2.217	1.501	.222	.15	— .716	32.30
Sawyers	72	8	10	10	1.512	1.965	.151	.197	+ .453	29.96
Sawyers' helpers		3		10		1.333		.133		
Scalers	3	3	10	10	2.667	2.033	.267	.208	— .584	21.90
Shipping clerks	14	12	10	10	2.034	2.142	.203	.214	+ .108	5.31
Sweepers		1		10		1.16		.116		
Teamsters	41	37	9.98	10.05	1.826	1.690	.183	.166	— .157	8.60
Watchmen	22	25	11.05	10.88	1.597	1.601	.145	.147	+ .004	.25
Weighers		1		10		2.00		.20		
Wood turners	9	10	10	9.90	2.094	2.08	.209	.21	— .014	.67
Yardmen	20	9	10	10	1.528	1.723	.153	.172	+ .195	12.76
Total and av.	2,498	2,633	9.99	9.98	\$1.611	\$1.645	\$.161	\$.165	+ \$.034	2.11

TABLE VII—CLASSIFICATION OF DAILY WAGES.

Classified daily wages, (inclusive.)	Total number of persons employed.						Average wages per day.					
	Male.		Female.		Total.		Male.		Female.		Total.	
	1904	1905.	1904.	1905.	1904	1905	1904.	1905.	1904.	1905.	1904.	1905.
\$.34 to \$.41..	2				2		\$.40					\$.40
.50 to .58..	69	22			69	22	.514	.515			.514	.515
.59 to .66..	71	19			71	19	.628	.608			.628	.608
.67 to .74..	4	22			4	22	.70	.673			.70	.673
.75 to .83..	104	139		3	104	142	.78	.764		\$.767	.78	.764
.84 to .91..	65	54			65	54	.865	.867			.865	.867
.92 to .99..	2	8			2	8	.95	.92			.95	.92
1.00 to 1.08..	100	137		3	100	140	1.00	1.00		1.00	1.00	1.00
1.08 to 1.16..	32	12		1	32	13	1.122	1.123		1.10	1.122	1.123
1.17 to 1.24..	4	4			4	4	1.20	1.20			1.20	1.20
1.25 to 1.33..	135	172			135	172	1.275	1.251			1.257	1.251
1.34 to 1.41..	288	129			288	129	1.355	1.364			1.355	1.364
1.42 to 1.49..	3	112			3	112	1.45	1.45			1.45	1.45
1.50 to 1.58..	432	568			432	568	1.503	1.50			1.503	1.50
1.59 to 1.66..	122	115			122	115	1.631	1.621			1.631	1.621
1.67 to 1.74..	11	35			11	35	1.697	1.687			1.697	1.687
1.75 to 1.83..	286	312			286	312	1.755	1.757			1.755	1.757
1.84 to 1.91..	120	75			120	75	1.856	1.865			1.856	1.865
1.92 to 1.99..		3				3		1.95				1.95
2.00 to 2.08..	234	237			234	237	2.00	2.00			2.00	2.00
2.09 to 2.16..	20	14			20	14	2.128	2.125			2.128	2.125
2.17 to 2.24..	5	32			5	32	2.20	2.20			2.20	2.20
2.25 to 2.33..	166	133			166	133	2.265	2.25			2.265	2.25
2.34 to 2.41..	17	19			17	19	2.37	2.372			2.37	2.372
2.42 to 2.49..	3	3			3	3	2.47	2.453			2.47	2.453
2.50 to 2.58..	108	131			108	131	2.501	2.50			2.501	2.50
2.59 to 2.66..	2	3			2	3	2.625	2.623			2.625	2.623
2.67 to 2.74..	8	3			8	3	2.70	2.70			2.70	2.70
2.75 to 2.83..	31	32			31	32	2.75	2.75			2.75	2.75
2.84 to 2.91..		2				2		2.875				2.875
3.00 to 3.08..	27	44			27	44	3.00	3.00			3.00	3.00
3.09 to 3.16..	1	7			1	7	3.10	3.15			3.10	3.15
3.25 to 3.33..	8	2			8	2	3.30	3.25			3.30	3.25
3.50 to 3.58..	2	6			2	6	3.50	3.50			3.50	3.50
3.59 to 3.66..	5	6			5	6	3.60	3.60			3.60	3.60
3.75 to 3.83..	1	1			1	1	3.75	3.75			3.75	3.75
3.84 to 3.91..	6	5			6	5	3.85	3.85			3.85	3.85
4.00 to 4.08..	4	5			4	5	4.00	4.03			4.00	4.03
4.50 to 4.58..		2				2		4.50				4.50
6.00 to 6.08..		1				1		6.00				6.00
Total and av.	2,498	2,626		7	2,498	2,633	\$1.611	\$1.647		\$.914	\$1.611	\$1.645

Remarks.—The manufacture of sash, doors, and other planing mill products is one of the twelve most important industries of the state. It is dependent directly upon the lumber industry. The census of 1900 reported 123 establishments in Wisconsin. The foregoing tables are based upon reports from 38 of these. A marked gain for 1905 is indicated. There was an increase of 3 per cent. in the total capital invested, all items of investment having increased; one of 20 per cent. in the materials used, of 6 per cent. in the average number of persons employed and the

value of the total wages and salaries paid, and of 13 per cent. in the output. Employment was moderately uniform, the only months of considerable unemployment being January and February of each year. No women were employed in this industry in 1904, and but seven in 1905. They worked only in accessory occupations. Their daily wages were slightly above the average for all industries. The daily wages of men, on the contrary, were considerably lower than the average.

40. SHEET METAL—21 ESTABLISHMENTS.

TABLE I—MANAGEMENT AND OPERATION.

Classification.	Number in		Increase, +, or decrease, —, in 1905.	
	1904.	1905	Amount.	Per cent
Number of private firms	11	11		
Number of male partners	20	19	— 1	5.—
Number of female partners				
Total number of partners	20	19	— 1	5.—
Number of corporations	10	10		
Number of male stockholders	76	73	— 3	3.95
Number of female stockholders	5	4	— 1	20.—
Total number of stockholders	81	77	— 4	4.94
Total number of partners and stockholders	101	96	— 5	4.95
Smallest number of persons employed	2,056	2,121	+ 65	3.16
Greatest number of persons employed	2,305	2,427	+ 122	5.29
Average number of persons employed	2,217	2,326	+ 109	4.92
Average days in operation	291	310	+ 19	0.53

TABLE II—INVESTMENT.

Classification.	Capital invested in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Land	\$191,215 00	\$211,200 00	+ \$19,985 00	10.45
Buildings and fixtures	379,224 66	405,704 66	+ 26,480 00	6.98
Machinery, etc.	471,729 04	492,229 07	+ 20,500 03	4.35
Cash and other capital	1,778,183 37	2,175,755 81	+ 402,572 44	22.70
Total	\$2,815,352 07	\$3,284,889 54	+\$469,537 47	16.68

TABLE III A—VALUE OF MATERIALS AND LABOR EMPLOYED, AND OF PRODUCT.

Classification.	Value of material used wages and salaries paid in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Raw material used	\$2,534,487 70	\$2,683,880 17	+ \$149,392 47	5.89
Other material used	264,394 73	309,305 34	+ 44,910 61	16.99
Wages	332,803 69	394,652 06	+ 61,848 37	7.43
Salaries	233,646 78	238,187 75	+ 4,540 97	1.94
Profit and minor expenses ...	437,069 00	451,818 34	+ 14,749 34	3.37
Goods made and work done .	4,302,401 90	4,577,843 66	+ 275,441 76	6.40

TABLE III B—ANALYSIS OF TABLE III A.

Classification.	1904.	1905.
Goods made and work done (gross product).....	\$4,302,401 90	\$4,577,843 66
Value of stock used and material consumed in pro- duction	2,798,882 43	2,993,185 51
Industry product (gross production less value of stock and material)	1,503,519 47	1,584,658 15
Wages and salaries (Labor's direct share of pro- duct)	1,063,450 47	1,132,839 81
Profit and minor expense fund (industry product less wages)	437,069 00	451,818 34
	Per cent.	Per cent.
Percentage of industry product paid in wages	70.93	71.49
Percentage of industry product devoted to profit and minor expenses	29.07	28.51

TABLE IV--AVERAGE CAPITAL, ETC., PER EMPLOYEE.

Classification.	Average capital, product and yearly earnings in		Increase, +, or decrease, -, in 905.	
	1904	1905.	Amount.	Per cent.
Average capital per employee	\$1,269 89	\$1,412 25	+ \$142 36	11.21
Average product per employee	1,940 64	1,963 12	+ 27 48	1.42
Average yearly earnings	375 64	384 63	+ 8 99	2.39

TABLE V--RANGE OF EMPLOYMENT AND OF UNEMPLOYMENT.

Months.	Total no of persons employed in		Percentages of			
			Employment in		Unemployment in	
	1904.	1905.	1904.	1905.	1904.	1905.
January	2,056	2,261	89.20	93.16	10.80	6.84
February	2,211	2,368	95.92	97.57	4.08	2.43
March	2,287	2,416	99.22	99.55	0.78	0.45
April	2,238	2,380	97.09	98.06	2.91	1.94
May	2,257	2,274	97.92	93.70	2.08	6.30
June	2,202	2,238	95.53	92.21	4.47	7.79
July	2,083	2,121	90.37	27.39	9.63	12.61
August	2,206	2,308	95.71	95.10	4.29	4.90
September	2,257	2,343	97.92	96.54	2.08	3.46
October	2,205	2,366	100.—	97.49	.....	2.51
November	2,205	2,406	100.—	99.14	.....	0.86
December	2,196	2,427	95.27	100.—	4.73	.....
Average	2,217	2,326	96.18	95.84	3.82	4.16

TABLE VI—OCCUPATIONS AND WAGES OF EMPLOYEES.

Occupations.	Total no. of persons.		Average hours per day		Average wages per day.		Average wages per hour.		Increase, +, or decrease, —, per day in 1905.		
	1901.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	Amt.	Per ct.	
Apprentices	10	22	8.40	8.73	\$1.31	\$1.45	\$.156	\$.166	+	\$.14	10.69
Blacksmiths	2	7	10.00	9.14	2.50	2.486	.25	.272	—	.014	0.56
Blacksmiths' helpers	1	1	10.00	10.00	1.65	1.65	.165	.165			
Boiler makers	9	9	10.00	9.44	2.528	2.528		.268			
Boiler makers' helpers	5	5	10.00	10.00	1.52	1.52		.152			
Boys	4	4	8.25	8.25	.963	.963		.117			
Carpenters	11	9	10.00	10.00	2.005	2.059	.201	.206	+	.054	2.70
Cornice makers	10	17	8.20	8.00	3.08	2.921	.376	.365	—	.059	1.92
Die makers	1	1	10.00	10.00	3.00	3.00		.30			
Electricians	1	1	10.00	10.00	2.25	2.50	.225	.25	+	.25	11.11
Enamelers	70	57	10.00	10.00	1.715	1.809	.172	.181	+	.094	5.48
Enamelers, female	116	12	10.00	10.00	.657	.665	.066	.067	+	.002	1.22
Enamelers' helpers	26	62	10.00	10.00	1.346	1.933	.135	.186	+	.517	38.41
Enamelers' helpers, female	35	45	10.00	10.00	.85	.833	.085	.083	—	.017	2.00
Engineers	5	6	10.00	10.00	2.75	2.638	.275	.264	—	.112	4.07
Finishers	20	8	10.00	10.00	1.00	1.00		.10			
Firemen	8	6	10.00	10.00	2.083	2.068	.208	.207	—	.015	0.72
Foremen	27	20	10.00	9.90	2.904	2.671	.29	.27	—	.233	8.02
Foremen	2	6	10.00	10.00	1.875	1.792	.188	.179	—	.083	4.43
Galvanizers	27	26	10.00	10.00	1.50	1.50	.15	.15			
Galvanizers' helpers	123	40	9.37	8.93	1.593	1.496	.157	.161	—	.127	7.97
Helpers	21	325	10.00	10.00	.691	.665	.069	.067	—	.026	3.76
Helpers, female	3	2	10.00	10.00	2.50	2.00	.25	.20	—	.50	20.00
Iron workers	4	4	10.00	10.00	1.625	1.75	.163	.175	+	.125	7.87
Japanners	3	3	10.00	10.00	1.25	1.25		.125			
Japanners' helpers	9	12	10.00	10.00	.833	.838	.083	.094	+	.105	12.60
Japanners' helpers, female	950	966	10.00	9.99	1.183	1.272	.118	.128	+	.089	7.52
Laborers	323	11	10.00	10.00	.672	.541	.068	.054	—	.131	19.49
Laborers, female	50	83	10.00	10.00	1.34	1.24	.134	.124	—	.10	7.43
Machine operators	74	78	10.00	10.00	2.635	2.581	.264	.258	—	.054	2.05
Machinists	9	8	10.00	10.00	1.361	1.519	.136	.152	+	.158	11.61
Machinists' helpers	31	31	10.00	10.00	2.255	2.194	.226	.219	—	.061	2.71
Molders	2	2	10.00	10.00	1.75	1.75		.175			
Packers	1	1	10.00	10.00	2.00	2.00		.20			
Painters	6	3	10.00	10.00	3.50	3.50		.35			
Piece workers	2	2	10.00	10.00	3.50	3.50		.35			
Platers	3	3	10.00	10.00	2.533	2.533		.253			
Polishers	102	127	10.00	10.00	1.404	1.382	.14	.138	—	.022	1.57
Press hands	7	3	10.00	10.00	1.557	1.557		.155			
Repairs	3	7	10.00	10.00	1.179	1.179		.118			
Rivet heaters	5	3	10.00	10.00	2.692	2.917	.269	.292	+	.225	8.36
Roofers	2	2	10.00	10.00	2.00	2.00		.20			
Roofers' helpers	16	13	9.13	8.62	2.672	2.908	.293	.337	+	.236	8.93
Sheet metal workers	12	8	10.00	10.00	1.671	1.569	.167	.157	—	.102	6.10
Sheet metal workers' helpers	65	78	10.00	10.00	1.435	1.444	.144	.144	+	.009	0.63
Shipping clerks	6	4	8.00	8.00	2.933	3.225	.367	.403	+	.292	9.96
Slaters	67	73	10.00	10.00	.81	.845	.081	.085	+	.035	4.32
Solderers' female	3	3	10.00	10.00	2.193	2.343	.219	.234	+	.15	6.84
Steamfitters	5	5	10.00	10.00	1.32	1.32		.132			
Tank makers	1	2	8.00	10.00	1.67	1.60	.209	.16	—	.07	4.19
Teamsters	3	3	10.00	10.00	1.25	1.25		.125			
Testers	81	92	8.97	9.33	2.398	2.086	.267	.224	—	.312	13.01
Tinners	78	67	10.00	9.91	1.282	1.188	.128	.121	—	.094	7.33
Tinners' helpers	5	12	10.00	10.00	.75	.67	.075	.067	—	.08	10.67
Tinners' helpers, female	1	1	10.00	10.00	2.50	2.50		.25			
Tool makers	8	8	11.25	11.25	2.00	2.00	.178	.178			
Watchmen	3	3	10.00	10.00	3.50	3.50		.35			
Welders											
Total	2,445	2,480	9.91	9.91	\$1.302	\$1.331	\$.131	\$.134	+	\$.029	2.23

TABLE VII—CLASSIFICATION OF DAILY WAGES.

Classified daily wages (inclusive.)	Total number of persons employed.						Average wages per day.					
	Male.		Female.		Total.		Male.		Female.		Total.	
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.
\$.34 to \$.41..	1	2			1	2	\$.40	\$.40			\$.40	\$.40
.42 to .49.....		2	2		2	2			\$.45	\$.45	.45	.45
.50 to .58.....	25		146	119	171	119	.524		.54	.515	.538	.515
.59 to .66.....	22	12	83	94	105	106	.627	.631	.624	.625	.625	.625
.67 to .74.....	51	52	100	117	151	169	.684	.673	.687	.684	.686	.681
.75 to .83.....	149	186	184	186	333	372	.79	.781	.768	.767	.778	.774
.84 to .91.....	29	26	9	5	38	31	.874	.883	.874	.88	.874	.882
.92 to .99.....	26	34	18	19	44	53	.92	.929	.92	.924	.92	.927
1.00 to 1.08.....	233	185	22	42	255	180	1.044	1.019	1.00	1.00	1.04	1.014
1.09 to 1.16.....	16	7			16	7	1.129	1.107			1.129	1.107
1.17 to 1.24.....	43	56			43	56	1.178	1.173			1.178	1.173
1.25 to 1.33.....	317	328	12	6	329	334	1.275	1.29	1.25	1.25	1.273	1.286
1.34 to 1.41.....	61	72			61	72	1.366	1.366			1.366	1.366
1.42 to 1.49.....	52	49			52	49	1.427	1.467			1.427	1.467
1.50 to 1.58.....	266	268			266	268	1.505	1.503			1.505	1.503
1.59 to 1.66.....	59	27			59	27	1.615	1.629			1.615	1.629
1.67 to 1.74.....	38	61			38	61	1.673	1.67			1.673	1.67
1.75 to 1.83.....	116	173			116	173	1.762	1.756			1.762	1.756
1.84 to 1.91.....	4	5			4	5	1.863	1.87			1.863	1.87
1.92 to 1.99.....	1	1			1	1	1.92				1.92	
2.00 to 2.08.....	116	146			110	146	2.00	2.001			2.00	2.001
2.09 to 2.16.....	3	2			3	2	2.117	2.10			2.117	2.10
2.17 to 2.24.....	2	2			2	2	2.185	2.185			2.185	2.185
2.25 to 2.33.....	45	38			45	38	2.268	2.262			2.268	2.262
2.34 to 2.41.....	5	3			5	3	2.38	2.389			2.38	2.389
2.50 to 2.58.....	45	90			43	66	2.50	2.50			2.50	2.50
2.59 to 2.66.....	14	0			14	6	2.639	2.60			2.639	2.60
2.67 to 2.74.....	4	4			4	4	2.67	2.67			2.67	2.67
2.75 to 2.83.....	56	41			56	41	2.784	2.773			2.784	2.773
2.84 to 2.91.....	8				8		2.875				2.875	
3.00 to 3.08.....	41	50			41	50	3.00	3.00			3.00	3.00
3.17 to 3.24.....	4	3			4	3	3.20	3.20			3.20	3.20
3.25 to 3.33.....	1	1			1	1	3.25	3.25			3.25	3.25
3.34 to 3.41.....	5	3			5	3	3.40	3.40			3.40	3.40
3.50 to 3.58.....	12	16			12	16	3.50	3.50			3.50	3.50
3.67 to 3.74.....	1	1			1	1	3.67				3.67	
3.75 to 3.83.....	1				1		3.80				3.80	
4.00 to 4.08.....	6	2			6	2	4.00	4.00			4.00	4.00
4.25 to 4.33.....		2				2		4.25				4.25
6.50 to 6.58.....		2				2		6.50				6.50
Total ...	1,869	1,890	576	590	2,455	2,480	\$1.488	\$1.527	\$.70	\$.704	\$1.302	1.331

Remarks.—There is a very large number of small and a few large establishments in the state engaged in this industry. Reports from 21 of them indicate a considerable gain for 1905. There was an increase of 17 per cent. in the total capital invested, of 7 per cent. in the average number of days of operation, of 5 per cent. in the number of employees, and of 6 per cent. in the output. Labor's share of the industry product was large each year—71 per cent. Employment was exceptionally uniform. About one-fourth of the total number of employees were women.

The majority of these were employed in subsidiary occupations. A large number however were engaged in work peculiar to the industry. Their hours of labor were uniformly 10 per day. The daily wages of both male and female help were considerably lower than the average for all industries.

41. SHIP AND BOAT BUILDING—5 ESTABLISHMENTS.

TABLE I—MANAGEMENT AND OPERATION.

Classification.	Number in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Number of private firms	2	2		
Number of male partners	2	2		
Number of female partners				
Total number of partners	2	2		
Number of corporations	3	3		
Number of male stockholders	22	21	— 1	4.55
Number of female stockholders	1	1		
Total number of stockholders	23	22	— 1	4.35
Total number of partners and stockholders	25	24	— 1	4.00
Smallest number of persons employed	213	182	— 31	14.55
Greatest number of persons employed	585	1,067	+ 482	82.39
Average number of persons employed	371	662	+ 291	78.44
Average days in operation	249	237	— 12	4.82

TABLE II—INVESTMENT.

Classification.	Capital invested in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Land	\$778,346 63	\$816,539 08	+ \$38,192 45	4.91
Buildings and fixtures	546,734 07	594,930 04	+ 48,195 97	8.81
Machinery, etc.	325,964 20	402,064 31	+ 76,100 11	9.26
Cash and other capital	281,016 89	296,188 53	+ 15,171 69	5.40
Total	\$1,972,111 79	\$2,109,772 01	+ \$137,660 22	6.98

TABLE III A—VALUE OF MATERIALS AND LABOR EMPLOYED, AND OF PRODUCT.

Classification.	Value of material used, wages and salaries paid in		Increase, +, or decrease, —, in 1905	
	1904.	1905.	Amount.	Per cent
Raw material used	\$142,982 71	\$220,111 43	+ \$77,128 72	53 94
Other material used	20,247 04	29,811 38	+ 9,564 34	47.24
Wages	224,802 71	334,031 40	+ 159,228 69	70.83
Salaries	24,545 26	25,699 71	+ 1,154 45	4.70
Profit and minor expenses....	70,639 77	112,828 29	+ 42,188 52	59.72
Goods made and work done..	\$483,217 49	\$772,482 21	+ \$289,264 72	59.86

TABLE III B—ANALYSIS OF TABLE III A.

Classification.	1904.	1905.
Goods made and work done (gross production).....	\$483,217 49	\$772,482 21
Value of stock used and material consumed in production	163,229 75	249,922 81
Industry product (gross production less value of stock and material)	319,987 74	522,559 40
Wages and salaries (Labor's direct share of product)	249,347 97	409,731 11
Profit and minor expense fund (industry product less wages)	70,639 77	112,828 29
	Per cent.	Per cent.
Percentage of industry product paid in wages.....	77.92	78.41
Percentage of industry product devoted to profit and minor expenses	22.08	21.59

TABLE IV—AVERAGE CAPITAL, ETC., PER EMPLOYEE.

Classification.	Average capital, product and yearly earnings in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent.
Average capital per employee.....	\$5,373 60	\$3,186 97	—\$2,186 63	40.69
Average product per employee.....	1,302 47	1,166 89	— 135 58	10.41
Average yearly earnings	605 94	580 11	— 25 83	4.26

TABLE V—RANGE OF EMPLOYMENT AND OF UNEMPLOYMENT.

Months	Total no. of persons employed in		Percentages of			
	1904.	1905.	Employment in		Unemployment in	
			1904.	1905	1904.	1905.
January	361	651	61.71	61.01	38.29	38.99
February	300	764	51.28	71.60	48.72	28.40
March	379	1,067	64.79	100.—	35.21	.....
April	585	969	100.—	90.82	.....	9.18
May	530	875	90.60	82.01	9.40	17.99
June	365	734	62.39	68.79	37.61	31.21
July	275	423	47.01	40.11	52.99	59.89
August	457	182	78.12	17.96	21.85	82.94
September	381	340	65.13	31.87	34.27	68.13
October	248	493	42.39	46.21	57.61	53.79
November	213	633	36.41	59.79	63.59	40.21
December	352	808	60.17	75.73	39.83	24.27
Average	371	662	63.42	62.04	36.58	37.96

TABLE VI—OCCUPATIONS AND WAGES OF EMPLOYEES.

Occupations.	Total no. of persons.		Average hours per day.		Average wages per day.		Average wages per hour.		Increase, +, or decrease, —, per day in 1905.		
	1904.	1905.	1904.	1905.	1904.	1905	1904.	1905.	Amt.	Per ct.	
Apprentices	3	6	10	10	\$1.083	\$1.292	\$.103	\$.129	+	\$.209	19.21
Blacksmiths	7	9	9.60	9.78	2.86	2.95	.298	.303	+	.09	3.15
Blacksmiths, helpers.	1	4	10	9.50	1.75	1.712	.175	.180	—	.038	2.17
Boat builders	2	2	10	10	2.50	2.50	.250	.250			
Captains		1		10		3.25		.325			
Carpenters	156	159	9.07	9.20	2.60	2.566	.287	.279	—	.034	1.31
Caulkers		28		9.04		2.714		.271			
Chippers	6	8	10	10	2.791	2.75	.279	.275	—	.041	1.47
Countersinkers	1	3	10	10	2.00	1.917	.200	.192	—	.083	4.15
Drillers	10	34	10	10	2.10	2.191	.210	.219	—	.091	7.33
Electricians	3	7	10	10	2.917	2.891	.292	.289	—	.126	4.32
Engineers	11	16	10	9.88	3.464	3.214	.346	.324	—	.250	7.22
Engineers' helpers ..	5		10		1.75		.175				
Finishers	2		10		2.125		.213				
Firemen	4	7	9.50	9.71	2.00	2.00	.211	.206			
Fitters	8	24	10	10	2.656	2.708	.266	.271	+	.052	1.95
Foremen	10	13	9.50	9.54	3.46	3.541	.354	.371	+	.051	2.34
Heaters	5	42	10	10	1.469	1.429	.147	.142	—	.040	2.72
Helpers	135	28	9.01	9.96	1.663	1.684	.185	.169	+	.021	1.26
Holders	14	30	10	10	2.147	2.167	.215	.217	—	.020	.96
Joiners	3	11	10	10	2.917	2.636	.292	.264	—	.281	9.63
Laborers	147	293	9.99	9.82	1.761	1.715	.176	.175	—	.046	2.61
Machinists	13	26	10	10	2.384	2.913	.238	.291	—	.029	1.04
Machinists' helpers...	5	12	10	10	1.70	1.816	.170	.182	+	.116	2.82
Mates		1		10		2.00		.200			
Painters	38	63	10	10	1.809	1.921	.181	.192	+	.112	6.19
Plumbers	2		10		2.25		.225				
Punchers		11		10		2.123		.212			
Riveters	25	66	10	10	2.67	2.781	.267	.278	+	.111	4.16
Rivet heaters	1	2	10	10	3.25	3.125	.325	.313	—	.125	3.85
Sawyers	2	2	9	9	2.50	2.25	.278	.250	—	.250	10.0
Scrubbers	33	45	10	10	1.394	1.378	.139	.138	+	.016	1.15
Sewers, female		12		10		1.00		.100			
Storekeepers	2	5	10	10	1.875	1.75	.188	.175	—	.125	6.67
Superintendents	3	3	10	9	4.67	4.637	.467	.459	—	.003	.06
Teamsters	5	6	10	9.33	2.13	1.958	.213	.211	—	.172	8.03
Watchmen	7	7	10	10.57	1.66	1.693	.166	.160	+	.033	1.99
Total and av.	673	936	9.57	9.80	\$2.096	\$2.101	\$.219	.214	+	.005	.24

TABLE VII—CLASSIFICATION OF DAILY WAGES.

Classified daily wages, (inclusive).	Total number of persons em- ployed.						Average wages per day.					
	Male.		Female.		Total.		Male.		Female.		Total.	
	1904	1905.	1904	1905.	1904	1905.	1904.	1905	1904.	1905.	1904.	1905.
\$.75 to .83..	2	1	.....	.....	2	1	\$.75	\$.75	.....	.....	\$.75	\$.75
.84 to .91..	.....	1	.....	.....	.....	1	.....	.90	.....	.....	.....	.90
1.00 to 1.08..	7	8	.....	12	7	20	1.00	1.00	.....	1.00	1.00	1.00
1.25 to 1.33..	8	26	.....	.....	8	26	1.25	1.25	.....	.....	1.25	1.25
1.50 to 1.58..	54	88	.....	.....	54	88	1.50	1.50	.....	.....	1.50	1.50
1.59 to 1.66..	106	90	.....	.....	106	90	1.60	1.629	.....	.....	1.60	1.629
1.67 to 1.74..	1	.....	.....	.....	1	.....	1.67	.....	.....	.....	1.67	.....
1.75 to 1.83..	167	240	.....	.....	167	240	1.756	1.753	.....	.....	1.756	1.753
1.84 to 1.91..	.....	1	.....	.....	.....	1	.....	1.85	.....	.....	.....	1.85
2.00 to 2.08..	59	85	.....	.....	59	85	2.006	2.003	.....	.....	2.006	2.003
2.25 to 2.33..	47	101	.....	.....	47	101	2.25	2.251	.....	.....	2.25	2.251
2.42 to 2.49..	13	8	.....	.....	13	8	2.43	2.48	.....	.....	2.48	2.48
2.50 to 2.58..	32	41	.....	.....	32	41	2.50	2.50	.....	.....	2.50	2.50
2.67 to 2.74..	103	.....	.....	.....	103	.....	2.70	.....	.....	.....	2.70	.....
2.75 to 2.83..	34	137	.....	.....	34	137	2.751	2.75	.....	.....	2.751	2.75
2.92 to 2.99..	.....	1	.....	.....	.....	1	.....	2.93	.....	.....	.....	2.93
3.00 to 3.08..	13	60	.....	.....	13	60	3.00	3.00	.....	.....	3.00	3.00
3.09 to 3.16..	6	5	.....	.....	6	5	3.15	3.15	.....	.....	3.15	3.15
3.25 to 3.33..	8	11	.....	.....	8	11	3.26	3.257	.....	.....	3.26	3.257
3.34 to 3.41..	.....	1	.....	.....	.....	1	.....	3.40	.....	.....	.....	3.40
3.50 to 3.58..	2	4	.....	.....	2	4	3.50	3.50	.....	.....	3.50	3.50
3.75 to 3.83..	4	4	.....	.....	4	4	3.762	3.75	.....	.....	3.762	3.75
4.00 to 4.08..	1	3	.....	.....	1	3	4.00	4.00	.....	.....	4.00	4.00
4.17 to 4.24..	1	5	.....	.....	1	5	4.17	4.17	.....	.....	4.17	4.17
4.25 to 4.33..	1	.....	.....	.....	1	.....	4.25	.....	.....	.....	4.25	.....
4.50 to 4.58..	.....	1	.....	.....	.....	1	.....	4.50	.....	.....	.....	4.50
5.00 to 5.08..	4	2	.....	.....	4	2	5.00	5.00	.....	.....	5.00	5.00
Total and av.	673	924	.....	12	673	936	\$2.096	\$2.115	.....	\$1.00	\$2.096	\$2.101

Remarks.—The building of ships and boats, although one of the smaller industries of the state, is yearly becoming one of greater importance. This is due on the one hand to the demand for the product, resulting from the large number of navigable lakes and streams both within the state and on its borders; and on the other, to the presence in Wisconsin of all the raw materials employed in the industry. An extraordinary gain was experienced in the two years covered by this report. There was an increase in 1905 of 7 per cent. in the total capital invested, of 78 per cent. in the average number of persons employed, of from 5 to 71 per cent. in the materials used and the total wages and salaries paid, and of 60 per cent in the output. The average yearly earnings of employees were about 4 per cent. less, owing chiefly to a decrease of about 5 per cent. in the number of days of operation. Labor's share of the industry product was

large—78 per cent. Employment was very irregular, the average of unemployment being from 37 to 38 per cent. March, April, and May were the months of greatest activity in this industry. The hours of labor were less than the average for all industries; the daily wages, on the contrary, were considerably higher. No women were employed in 1904. In the following year 12 were employed as sewers. Their wages were \$1.00 per day, 10 hours' work.

42. SOAP—6 ESTABLISHMENTS.

TABLE I—MANAGEMENT AND OPERATION.

Classification.	Number in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Number of private firms	4	4		
Number of male partners	5	5		
Number of female partners	2	2		
Total number of partners	7	7		
Number of corporations	2	2		
Number of male stockholders	13	16	+ 3	23.08
Number of female stockholders	2	3	+ 1	50.—
Total number of stockholders	15	19	+ 4	26.67
Total number of partners and stockholders	22	26	+ 4	18.18
Smallest number of persons employed	76	80	+ 4	5.26
Greatest number of persons employed	87	106	+ 19	21.84
Average number of persons employed	83	88	+ 6	7.32
Average days in operation	291	304	+ 13	4.47

TABLE II—INVESTMENT.

Classification.	Capital invested in		Increase, + or decrease, —, in 1905	
	1904.	1905.	Amount.	Per cent
Land	\$10,000 00	\$10,000 00		
Buildings and fixtures	11,000 00	11,000 00		
Machinery, etc.,	35,585 65	37,009 25	+ \$1,423 60	4.00
Cash and other capital	128,762 07	122,111 19	— 6,650 88	5.17
Total	\$185,347 72	\$180,120 44	— \$5,227 28	2.82

TABLE III A—VALUE OF MATERIALS AND LABOR EMPLOYED, AND OF PRODUCT.

Classification.	Value of material used, wages and salaries paid in		Increase, +, or decrease, —, in 1905	
	1904.	1905.	Amount.	Per cent
Raw material used	\$277,495 64	\$296,658 68	+ \$19,163 04	6.90
Other material used	6,530 00	7,400 00	+ 870 00	13.32
Wages	35,111 79	38,603 60	+ 3,491 81	9.94
Salaries	48,401 11	48,767 13	+ 366 02	0.76
Profit and minor expenses ...	55,543 09	57,690 82	+ 2,147 73	3.87
Goods made and work done .	423,081 63	449,120 23	+ \$26,038 60	6.15

TABLE III B—ANALYSIS OF TABLE III A.

Classification.	1904.	1905.
Goods made and work done (gross product).....	\$423,081 63	\$449,120 23
Value of stock used and material consumed in production	234,025 64	304,058 68
Industry product (gross production less value of stock and material)	139,055 99	145,061 55
Wages and salaries (Labor's direct share of product)	83,512 90	87,370 73
Profit and minor expense fund (industry product less wages)	55,543 09	57,690 82
	Per cent.	Per cent.
Percentage of industry product paid in wages.....	60.06	60.23
Percentage of industry product devoted to profit and minor expenses	39.94	39.77

TABLE IV—AVERAGE CAPITAL, ETC., PER EMPLOYEE.

Classification.	Average capital, product and yearly earnings in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent.
Average capital per employee	\$2,260 34	\$2,046 82	— \$213 52	9.45
Average product per employee	5,159 53	5,103 64	— 55 89	1.08
Average yearly earnings	428 19	438 63	+ 10 49	2.45

TABLE V—RANGE OF EMPLOYMENT AND OF UNEMPLOYMENT.

Months.	Total no. of persons employed in		Percentages of			
			Employment in		Unemployment in	
	1904.	1905.	1904.	1905.	1904.	1905.
January	86	81	98.85	76.41	1.15	23.59
February	87	80	100.—	75.47	.....	24.53
March	85	85	97.70	80.19	2.30	19.81
April	84	85	96.55	80.19	3.45	19.81
May	83	84	95.40	79.25	4.60	20.75
June	79	83	90.80	78.30	9.20	21.70
July	78	81	89.65	76.41	10.35	23.59
August	76	80	87.36	75.47	12.64	24.53
September	79	94	90.80	88.68	9.20	11.32
October	81	106	93.10	100.—	6.90	.....
November	83	94	95.40	88.68	4.60	11.32
December	78	104	89.65	98.11	10.35	1.89
Average	82	88	94.25	83.02	5.75	16.98

TABLE VI—OCCUPATIONS AND WAGES OF EMPLOYEES.

Occupations.	Total no. of persons.		Average hours per day.		Average wages per day.		Average wages per hour.		Increase, +, or decrease, —, per day in 1905.		
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.			
									Amt.	Per ct.	
Bookkeepers, female.	2	1	9	5	\$1.42	\$1.15	\$.158	\$.144	—	\$.27	19.02
Drivers	1	.....	9	.....	2.66	.....	.296	.....	.....	.....	.....
Engineers	2	2	10	10	2.00	2.25	.200	.225	+	.25	12.50
Finishers, female	23	11	10	10	.83	.672	.083	.067	—	.158	19.04
Firemen .....	.....	2	.....	10	.....	1.84	.....	.184	.....	.....	.....
Foremen	1	.....	10	.....	3.33	.....	.333	.....	.....	.....	.....
Helpers	20	31	9.45	9.35	1.495	1.583	.175	.169	+	.088	5.95
Helpers, female .....	.....	13	.....	10	.....	.704	.....	.070	.....	.....	.....
Laborers	18	11	10	10	1.758	1.645	.176	.165	—	.118	6.43
Laborers, female	17	.....	10	.....	.655	.....	.066	.....	.....	.....	.....
Machinists .....	.....	2	.....	10	.....	3.33	.....	.333	.....	.....	.....
Mixers	1	.....	9	.....	1.66	.....	.184	.....	.....	.....	.....
Packers	1	1	10	10	1.92	2.00	.192	.200	+	.08	4.17
Pressmen	4	3	10	10	1.585	1.723	.159	.172	+	.138	8.71
Salesmen	3	.....	8	.....	4.00	.....	.400	.....	.....	.....	.....
Soap cutters	1	1	10	10	1.83	1.83	.183	.183	.....	.....	.....
Soap makers	3	4	9.67	9.75	2.97	2.707	.371	.271	—	.263	8.20
Stenographers, female	1	.....	10	.....	1.00	.....	.10	.....	.....	.....	.....
Teamsters	4	4	10	10	2.218	2.21	.222	.221	—	.008	.37
Total and average	102	86	9.59	9.84	\$1.443	\$1.493	\$.150	\$.152	+	\$.05	3.46

TABLE VII—CLASSIFICATION OF DAILY WAGES.

Classified daily wages, (inclusive).	Total number of persons employed.						Average wages per day.					
	Male.		Female.		Total.		Male.		Female.		Total.	
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.
\$.50 to \$.58.	1	.....	10	3	11	3	\$.58	.....	\$.552	\$.50	\$.555	\$.50
.59 to .66.	.....	.....	9	3	9	3	.....	.....	.63	.63	.63	.63
.67 to .74.	2	.....	7	12	9	12	.67	.....	.681	.68	.679	.68
.75 to .83.	5	6	3	5	8	11	.79	\$.75	.803	.782	.795	.705
.84 to .91.	.....	.....	.....	.....	.....	1	.....	.88	.....	.....	.....	.88
1.00 to 1.08.	1	2	13	1	14	3	1.00	1.04	1.068	1.08	1.061	1.073
1.09 to 1.16.	.....	.....	.....	1	.....	1	.....	.....	.....	1.15	.....	1.15
1.17 to 1.24.	.....	1	.....	.....	.....	1	.....	1.17	.....	.....	.....	1.17
1.25 to 1.33.	4	.....	.....	.....	4	.....	1.27	.....	.....	.....	1.27	.....
1.50 to 1.58.	5	4	.....	.....	5	4	1.508	1.50	.....	.....	1.508	1.50
1.59 to 1.66.	1	5	.....	.....	1	5	1.66	1.648	.....	.....	1.66	1.648
1.67 to 1.74.	11	10	.....	.....	11	10	1.67	1.67	.....	.....	1.67	1.67
1.75 to 1.83.	4	4	.....	.....	4	4	1.83	1.823	.....	.....	1.83	1.823
1.84 to 1.91.	.....	6	1	.....	1	0	.....	1.84	1.84	.....	1.84	1.84
1.92 to 1.99.	2	.....	.....	.....	2	.....	1.92	.....	.....	.....	1.92	.....
2.00 to 2.08.	8	9	.....	.....	8	9	2.00	2.00	.....	.....	2.00	2.00
2.17 to 2.24.	.....	1	.....	.....	.....	1	.....	2.20	.....	.....	.....	2.20
2.25 to 2.33.	4	1	.....	.....	4	1	2.31	2.25	.....	.....	2.31	2.25
2.50 to 2.58.	2	7	.....	.....	2	7	2.50	2.50	.....	.....	2.50	2.50
2.59 to 2.66.	1	.....	.....	.....	1	.....	2.66	.....	.....	.....	2.66	.....
2.84 to 2.91.	.....	1	.....	.....	.....	1	.....	2.84	.....	.....	.....	2.84
3.25 to 3.33.	4	3	.....	.....	4	3	3.33	3.33	.....	.....	3.33	3.33
4.00 to 4.06.	3	.....	.....	.....	3	.....	4.00	.....	.....	.....	4.00	.....
4.17 to 4.24.	1	.....	.....	.....	1	.....	4.17	.....	.....	.....	4.17	.....
Total and av	59	61	43	25	102	86	\$1.916	\$1.814	\$.793	\$.692	\$1.443	\$1.493

Remarks.—This industry shows a moderate gain for 1905. There was an increase of 4 per cent. in the number of days of operation, of 7 per cent. in the number of employees, of from 1 per cent. to 13 per cent. in the materials used and the total wages and salaries paid, and of 6 per cent. in the output. The decrease of 3 per cent. in the total capital invested is probably to be explained by the assumption that a portion of the cash invested was temporarily employed elsewhere, at a time when a greater amount was on hand than was needed in the conduct of the business of this industry. Labor's share of the industry product was 60 per cent.—a fair proportion. Employment was somewhat irregular, especially in 1905. Both male and female help were employed in the regular occupations of this industry. The female employees constituted nearly one-half of the total number in 1904, but less than one-third of the total in 1905. There was no marked change in their hours of labor, but their average daily wages decreased by more than 12 per cent. Men's wages suffered a decrease of about 5 per cent.

43. STARCH—8 ESTABLISHMENTS.

TABLE I—MANAGEMENT AND OPERATION.

Classification.	Number in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Number of private firms	2	2	.....	.....
Number of male partners	8	8	.....	.....
Number of female partners .....	.....	.....	.....	.....
Total number of partners	8	8	.....	.....
Number of corporations	6	6	.....	.....
Number of male stockholders	280	279	— 1	— 0.36
Number of female stockholders .....	.....	.....	.....	.....
Total number of stockholders	280	279	— 1	— 0.36
Total number of partners and stockholders	288	287	— 1	— 0.35
Smallest number of persons employed	16	18	+ 2	+ 12.50
Greatest number of persons employed	80	105	+ 25	+ 31.25
Average number of persons employed	37	40	+ 3	+ 8.11
Average days in operation	81	103	+ 22	+ 27.14

TABLE II—INVESTMENT.

Classification.	Capital invested in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Land	\$12,600 00	\$12,800 00	+ \$200 00	1.59
Buildings and fixtures	61,175 00	61,500 00	+ 325 00	0.53
Machinery, etc.,	63,675 00	64,000 00	+ 325 00	0.51
Cash and other capital	16,450 00	19,253 98	+ 2,803 98	17.04
Total	\$153,900 00	\$157,553 98	+ \$3,653 98	2.37

TABLE III A—VALUE OF MATERIALS AND LABOR EMPLOYED, AND OF PRODUCT.

Classification.	Value of material used, wages and salaries paid in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Raw material used	\$122,866 69	\$128,805 88	+ \$5,939 22	4.83
Other material used	16,957 91	23,737 79	+ 6,779 88	39.98
Wages	22,159 83	25,180 63	+ 3,020 80	13.63
Salaries	2,623 25	2,677 30	+ 54 05	2.06
Profit and minor expenses ...	40,433 33	47,237 70	+ 6,804 37	16.83
Goods made and work done .	205,041 06	227,639 33	+ 22,598 27	10.21

TABLE III B—ANALYSIS OF TABLE III A.

Classification.	1904.	1905.
Goods made or work done (gross product)	\$205,041 06	\$227,639 33
Value of stock used and material consumed in production	139,824 57	152,543 67
Industry product (gross production less value of stock and material)	65,216 49	75,095 66
Wages and salaries (Labor's direct share of product)	24,783 11	27,857 96
Profit and minor expense fund (industry product less wages)	40,433 38	47,237 70
	Per cent.	Per cent.
Percentage of industry product paid in wages.....	37.00	37.10
Percentage of industry product devoted to profit and minor expenses	63.00	62.90

TABLE IV—AVERAGE CAPITAL, ETC., PER EMPLOYEE.

Classification.	Average capital, product and yearly Earnings in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent.
Average capital per employee	\$4,159 46	\$3,938 85	— \$220 61	5.30
Average product per employee	5,541 65	5,690 98	+ 149 33	2.69
Average yearly earnings	598 92	629 52	+ 30 60	5.11

TABLE V—RANGE OF EMPLOYMENT AND OF UNEMPLOYMENT.

Months.	Total no. of persons employed in		Percentages of			
	1904.	1905.	Employment in		Unemployment in	
			1904.	1905.	1904.	1905.
January	28	30	35.—	28.57	65.—	71.43
February	16	13	20.—	17.14	80.—	82.86
March	28	65	35.—	61.90	65.—	38.10
April	61	105	76.25	100.—	23.75	.....
May	43	77	53.75	73.33	46.25	26.67
June	44	46	55.—	43.81	45.—	56.19
July	16	18	20.—	17.14	80.—	82.86
August	16	18	20.—	17.14	80.—	82.86
September	41	26	51.25	24.76	48.75	75.24
October	80	42	100.—	40.—	.....	60.00
November	51	18	63.75	17.14	36.25	82.86
December	16	18	20.—	17.14	80.—	82.86
Average	37	40	46.25	38.10	53.75	61.90

TABLE VI—OCCUPATIONS AND WAGES OF EMPLOYEES.

Occupations.	Total no. of persons.		Average hours per day.		Average wages per day.		Average wages per hour.		Increase, +, or decrease, —, per day in 1905.		
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	Amt.	Per ct.	
Engineers	5	3	10.00	10.00	\$2.73	\$2.50	\$.248	6.250	—	\$.080	3.19
Factory hands	7	15	9.00	9.00	2.407	2.50	.268	.278	+	.093	3.83
Factory hands, female	2	3	9.00	9.00	1.175	1.50	.131	.166	+	.325	27.66
Firemen	2	2	10.00	10.00	1.50	1.75	.150	.175	+	.250	16.63
Foremen	4	2	11.25	10.00	3.625	2.00	.322	.200	—	1.425	89.81
Helpers	8	8	9.50	10.00	1.625	1.716	.171	.172	+	.091	5.60
Laborers	63	60	10.00	10.00	1.698	1.738	.170	.174	+	.040	2.39
Machine tenders	1	1	12.00	12.00	2.00	2.00	.166	.166			
Machinists	1	5	12.00	12.00	3.00	2.60	.250	.217	—	.400	13.33
Potato buyers	1	1	10.00	10.00	2.50	2.50	.250	.250			
Scale men	1	1	10.00	10.00	1.75	1.75	.175	.175			
Shipping clerks	2	5	9.00	9.00	2.375	2.375	.2375	.2375			
Starch makers	2	5	10.80	10.00	2.96	3.45	.274	.345	+	.490	16.75
Teamsters	2	2	9.50	9.50	3.05	3.05	.321	.321			
Watchmen	1	1	12.00	12.00	2.00	2.00	.166	.166			
Weighers	2	2	10.00	10.00	2.275	1.875	.228	.188	—	.400	17.58
Total	107	108	10.01	9.89	\$1.98	\$1.995	\$.198	\$.202	+	\$.015	.76

TABLE VII—CLASSIFICATION OF DAILY WAGES.

Classified daily wages, (inclusive).	Total number of persons employed.						Average wages per day.					
	Male.		Female.		Total.		Male.		Female.		Total.	
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.
\$1.09 to \$1.16.			1		1					\$1.10		\$1.10
1.25 to 1.33.			1		1					1.25		1.25
1.50 to 1.58.	24	14		3	24	17	\$1.50	\$1.50		\$1.50	1.50	1.50
1.59 to 1.66.	3				3		1.60				1.60	1.60
1.75 to 1.83.	42	53			42	53	1.75	1.75			1.75	1.75
1.84 to 1.91.	2				2		1.85				1.85	1.85
2.00 to 2.08.	4	8			4	8	2.00	2.00			2.00	2.00
2.25 to 2.33.	3	2			3	2	2.266	2.25			2.266	2.25
2.34 to 2.41.	3				3		2.40				2.40	2.40
2.50 to 2.58.	12	20			12	20	2.50	2.50			2.50	2.50
2.84 to 2.91.	1				1		2.90				2.90	2.90
3.00 to 3.08.	7	5			7	5	3.00	3.00			3.00	3.00
3.09 to 3.16.	1				1		3.10				3.10	3.10
3.75 to 3.82.		1				1		3.75				3.75
4.00 to 4.08.	2	2			2	2	4.00	4.00			4.00	4.00
4.50 to 4.55.	1				1		4.50				4.50	4.50
Total ...	105	105	2	3	107	108	\$1.955	\$2.009	\$1.175	\$1.50	\$1.98	\$1.995

Remarks.—The manufacture of starch, one of the smaller industries of the state, shows a material gain for 1905. There was an increase of 8 per cent. in the number of employees, of 31 per cent in the average number of days of operation, of from 2 to 40 per cent. in the material used and the total wages and salaries paid, and of 10 per cent. in the output. The average yearly earnings of employees increased about 5 per cent. Labor's share of the industry product was very small each year—37 per cent. Employment was exceptionally irregular, unemployment reaching a maximum of 54 per cent. in 1904 and of 62 per cent. in 1905. There were very few female employees. Two women worked as factory hands in 1904, and three in 1905. Their hours of labor were 9 per day. Their average daily wages were \$1.18 in 1904 and \$1.50 in 1905. The hours for men averaged over 10 per day in 1904, but less than 10 in 1905. The daily wages both of men and of women were considerably higher than the average for all industries.

44. STAVES AND HEADINGS—8 ESTABLISHMENTS.

TABLE I—MANAGEMENT AND OPERATION.

Classification.	Number in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Number of private firms	3	2	— 1	33.33
Number of male partners	4	5	+ 1	25.00
Number of female partners				
Total number of partners	4	5	+ 1	25.00
Number of corporations	5	6	+ 1	20.00
Number of male stockholders	271	275	+ 4	1.48
Number of female stockholders.....	198	197	— 1	0.51
Total number of stockholders.....	469	472	+ 3	0.64
Total number of partners and stockholders	473	477	+ 4	0.85
Smallest number of persons employed.....	166	199	+ 33	19.88
Greatest number of persons employed	356	322	— 34	9.55
Average number of persons employed	277	266	— 11	3.97
Average days in operation	293	250	— 43	14.68

TABLE II—INVESTMENT.

Classification.	Capital invested in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent.
Land	\$56,932 10	\$34,700 00	— \$22,232 10	39.05
Building and fixtures	39,500 00	31,500.00	— 8,000 00	20.25
Machinery, etc.,	49,317 11	45,750 00	— 3,567 11	7.23
Cash and other capital	149,292 89	145,649 50	— 3,643 39	2.44
Total	\$295,042 10	\$257,599 50	— \$37,442 60	12.69

TABLE III A—VALUE OF MATERIALS AND LABOR EMPLOYED, AND OF PRODUCT.

Classification.	Value of material used, wages and salaries paid in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Raw material used	\$158,524 97	\$122,831 41	— \$35,693 56	22.52
Other material used	10,759 94	8,313 21	— 2,446 73	22.74
Wages	120,240 77	99,131 14	— 21,109 63	17.55
Salaries	10,734 00	13,497 00	+ 2,763 00	25.74
Profit and minor expenses ...	41,767 76	38,541 87	— 5,225 89	12.51
Goods made and work done ..	342,027 44	280,314 63	— 61,712 81	18.04

TABLE III B—ANALYSIS OF TABLE III A.

Classification.	1904.	1905.
Goods made or work done (gross product)	\$342,027 44	\$280,314 63
Value of stock used and material consumed in production	169,284 91	131,144 62
Industry product (gross production less value of stock and material)	172,742 53	149,170 01
Wages and salaries (Labor's direct share of product)	130,974 77	112,638 14
Profit and minor expense fund (industry product less wages)	41,767 76	36,541 87
	Per cent.	Per cent.
Percentage of industry product paid in wages	75.82	75.50
Percentage of industry product devoted to profit and minor expenses	24.18	24.50

TABLE IV—AVERAGE CAPITAL, ETC., PER EMPLOYEE.

Classification.	Average capital, product and yearly earnings in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent.
Average capital per employee	\$1,065 13	\$962 42	— \$102 71	9.64
Average product per employee	1,234 76	1,053 81	— 180 95	14.65
Average yearly earning	434 08	372 67	— 61 41	14.15

TABLE V—RANGE OF EMPLOYMENT AND OF UNEMPLOYMENT.

Months.	Total no. of persons employed in		Percentages of			
	1904.	1905.	Employment in		Unemployment in	
			'1904.	1905.	1904.	1905.
January	257	263	72.19	81.68	27.81	18.32
February	292	306	82.02	95.03	17.98	4.97
March	336	288	94.38	89.44	5.62	10.56
April	356	282	100.—	87.58	.....	12.42
May	352	292	98.88	90.68	1.12	9.32
June	343	302	96.35	93.79	3.65	6.21
July	338	322	94.95	100.—	5.05	.....
August	277	233	77.81	72.36	22.19	27.64
September	228	199	64.04	61.80	35.96	38.20
October	176	235	49.44	72.98	50.56	27.02
November	204	235	57.30	72.98	42.70	27.02
December	166	233	46.63	72.36	53.37	27.64
Average	277	266	77.81	82.61	22.19	17.39

TABLE VI—OCCUPATIONS AND WAGES OF EMPLOYEES.

Occupations.	Total no. of persons.		Average hours per day.		Average wages per day.		Average wages per hour.		Increase, +, or decrease, -, per day in 1905.	
	1904.	1905	1904.	1905.	1904.	1905.	1904.	1905.	Amt.	Per ct.
Barkers	1	10			\$1.50		\$.150			
Bolters	2	1 10	10		1.50	\$1.75	.150	\$.175	+ .250	16.67
Box makers		2	10			2.00		.200		
Boys	15	9 10	10		1.107	.789	.111	.079	- .318	28.73
Cullers		1	9			1.75		.194		
Cut-off sawyers	1	1 10	10		1.50	2.00	.150	.200	+ .500	33.33
Cutters		1	9			3.50		.389		
Engineers	4	6 10.50	10.08		2.313	1.942	.220	.193	- .371	16.04
Feeders		3	10			1.38		.138		
Filers	2	3 10.25	10		3.00	2.75	.293	.275	- .250	8.33
Finishers		6	10			1.75		.175		
Firemen	10	6 10.60	11.67		2.058	1.833	.194	.157	- .225	10.93
Flexors	3	10			1.38		.138			
Foremen	2	2 10	10		3.50	3.00	.350	.300	- .500	14.29
Grinders		1	10			2.00		.200		
Headers	11	10.18			2.386		.234			
Head matchers	1	1 10	10		1.65	1.75	.165	.175	+ .100	6.06
Hub men	10	10			1.975		.198			
Joiners	1	2 10	10		1.75	1.75	.175	.175		
Laborers	139	236 10	10.15		1.442	1.453	.144	.143	+ .011	0.76
Lathe tenders		1	10			1.90		.190		
Machine operators ..	32	6 10	10.17		1.867	2.083	.187	.205	+ .216	11.60
Machinists	1	1 10	10		2.25	3.30	.225	.225	+ 1.050	46.66
Mill men	5	10.50			2.00		.190			
Millwrights		1	10			2.25		.225		
Packers	1	10			1.50		.150			
Painters	1	1 10	10		2.00	2.25	.200	.225	+ .250	12.50
Pilers	2	2 10	10		2.00	2.00	.200	.200		
Sawyers	3	6 10	10.08		2.00	2.042	.200	.203	+ .042	2.10
Stavers	1	10			4.00		.400			
Teamsters	3	2 10	10		1.50	1.25	.150	.125	- .250	16.66
Turners	1	6 10	10		2.00	2.25	.200	.225	+ .250	12.50
Watchmen	1	1 10	10		1.50	2.00	.150	.200	+ .500	33.33
Watchmen	39	10.50			1.505		.143			
Total	292	308	10.14	10.15	\$1.629	\$1.553	\$.161	\$.153	- \$.076	4.67

TABLE VII—CLASSIFICATION OF DAILY WAGES.

Classified daily wages, (inclusive).	Total number of persons em- ployed.						Average wages per day.					
	Male.		Female.		Total.		Male.		Female.		Total.	
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.
\$.50 to \$.58.	.....	2	.....	.....	.....	2	.....	\$.50	.....	.....	.....	\$.50
.75 to .83.	6	8	.....	.....	.....	6	8	\$.75	.75	.....	.....	\$.75
.84 to .91.	1	6	.....	.....	.....	1	6	.85	.883	.....	.....	.85
1.00 to 1.08.	17	25	.....	.....	.....	17	25	1.00	1.00	.....	.....	1.00
1.09 to 1.16.	2	1	.....	.....	.....	2	1	1.10	1.10	.....	.....	1.10
1.25 to 1.33.	37	6	.....	.....	.....	37	6	1.25	1.25	.....	.....	1.25
1.34 to 1.41.	10	5	.....	.....	.....	10	5	1.37	1.38	.....	.....	1.37
1.50 to 1.58.	119	155	.....	.....	.....	119	155	1.502	1.50	.....	.....	1.502
1.59 to 1.66.	5	21	.....	.....	.....	6	21	1.605	1.607	.....	.....	1.608
1.67 to 1.74.	5	.....	.....	.....	.....	6	.....	1.73	.....	.....	.....	1.73
1.75 to 1.83.	23	40	.....	.....	.....	23	40	1.75	1.75	.....	.....	1.75
1.84 to 1.91.	13	2	.....	.....	.....	18	2	1.87	1.875	.....	.....	1.87
2.00 to 2.08.	21	13	.....	.....	.....	21	13	2.00	2.00	.....	.....	2.00
2.25 to 2.33.	10	8	.....	.....	.....	10	8	2.25	2.25	.....	.....	2.25
2.50 to 2.58.	1	1	.....	.....	.....	1	1	2.50	2.50	.....	.....	2.50
2.75 to 2.83.	.....	1	.....	.....	.....	1	.....	2.75	.....	.....	.....	2.75
3.00 to 3.08.	4	6	.....	.....	.....	4	6	3.00	3.00	.....	.....	3.00
3.25 to 3.33.	.....	1	.....	.....	.....	1	.....	3.30	.....	.....	.....	3.30
3.50 to 3.58.	9	1	.....	.....	.....	9	1	3.50	3.50	.....	.....	3.50
4.00 to 4.08.	2	.....	.....	.....	.....	2	.....	4.00	.....	.....	.....	4.00
Total	.....	292	308	.....	.....	292	308	\$1.629	\$1.553	.....	.....	\$1.629
												\$1.553

Remarks.—This industry appears to have suffered a considerable decline in 1905. The reason is difficult to ascertain, especially since the industry of cooperage—which makes use of the product of this industry—shows a gain for that year. One cause may be an overstocking of the market in 1904. But a more probable reason lies in the assumption that a part of the capital formerly invested here was applied to other branches of the lumber industry in which greater profits would be realized. The foregoing tables indicate a decrease of from 4 to 13 per cent. in the capital invested, the number of persons employed, the average days of operation, the materials used, the average yearly earnings of employees, and the output. No female help was employed in this industry. Men's daily wages were considerably lower than the average for all industries. Their hours of labor were somewhat over 10 per day.

45. STONE—22 ESTABLISHMENTS.

TABLE I—MANAGEMENT AND OPERATION.

Classification.	Number in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount	Per cent
Number of private firms.....	9	8	— 1	11.11
Number of male partners.....	16	10	— 6	37.50
Number of female partners.....	1	7	+ 6	600.00
Total number of partners.....	17	17	.....	.....
Number of corporations.....	13	14	+ 1	7.69
Number of male stockholders.....	72	76	+ 4	5.56
Number of female stockholders.....	5	8	+ 3	60.00
Total number of stockholders.....	77	84	+ 7	9.09
Total number of partners and stockholders..	94	101	+ 7	7.45
Smallest number of persons employed.....	431	438	+ 7	1.62
Greatest number of persons employed.....	1,156	933	— 223	19.29
Average number of persons employed.....	327	710	— 117	14.15
Average days in operation.....	262	260	— 2	0.76

TABLE II—INVESTMENT.

Classification.	Capital invested in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Land	\$573,623 25	\$575,150 00	+ \$1,526 75	0.27
Buildings and fixtures.	341,396 73	355,414.77	+ 14,018 04	4.16
Machinery, etc.	357,158 00	358,146 43	+ 988 43	0.28
Cash and other capital	379,811 07	366,202 44	— 13,608 63	3.58
Total	\$1,651,989 05	\$1,634,913 64	+ \$2,924 59	0.18

TABLE III A—VALUE OF MATERIALS AND LABOR EMPLOYED, AND OF PRODUCT.

Classification.	Value of material used, wages and salaries paid in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Raw material used	\$420,720 41	\$342,764 16	— \$77,956 25	18.53
Other material used	69,271 23	73,751 01	— 25,520 22	25.78
Wages	390,226 55	340,723 49	— 49,498 06	12.63
Salaries	73,709 92	68,350 80	— 5,359 12	7.27
Profit and minor expenses....	229,783 57	235,997 63	+ 6,214 11	2.70
Goods made and work done..	\$1,213,711 68	\$1,061,592 14	— \$152,119 54	12.53

TABLE III B—ANALYSIS OF TABLE III A.

Classification.	1904,	1905.
Goods made and work done (gross product).....	\$1,213,711 68	\$1,061,592 14
Value of stock used and material consumed in production	519,991 64	416,515 17
Industry product (gross production less value of stock and material)	693,720 04	645,076 97
Wages and salaries (Labor's direct share of product)	463,936 47	409,079 29
Profit and minor expense fund (industry product less wages)	229,783 57	235,997 68
	Per cent.	Per cent.
Percentage of industry product paid in wages.....	66.88	63.42
Percentage of industry product devoted to profit and minor expenses	33.12	36.58

TABLE IV—AVERAGE CAPITAL, ETC., PER EMPLOYEE.

Classification.	Average capital, product, and yearly earnings in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent.
Average capital per employee.....	\$1,997 57	\$2,330 86	+ \$333 29	16.68
Average product per employee.....	1,455 52	1,495 20	+ 39 68	2.73
Average yearly earnings	459 77	479 80	+ 20 03	4.36

TABLE V—RANGE OF EMPLOYMENT AND OF UNEMPLOYMENT.

Months.	Total no. of persons employed in		Percentages of			
			Employment in		Unemployment in	
	1904.	1905.	1904.	1905.	1904.	1905.
January	450	438	38.93	46.95	61.07	53.05
February	431	440	37.28	47.80	62.72	52.20
March	549	551	47.49	59.06	52.51	40.94
April	773	704	66.87	75.46	33.13	24.54
May	1,009	813	87.28	87.14	12.72	12.86
June	1,079	876	93.34	93.89	6.66	6.11
July	1,120	929	96 89	99.57	3.11	0.43
August	1,156	933	100.—	100.—	.....	.....
September	1,032	865	89.27	92.71	10.73	7.29
October	993	784	85.90	84.03	14.10	15.97
November	828	641	71.63	63.70	28.37	31.30
December	504	537	43.60	57.56	56.40	42.44
Average	827	710	71.54	76.10	28.46	23.90

TABLE VI—OCCUPATIONS AND WAGES OF EMPLOYEES.

Occupations.	Total no. of persons.		Average hours per day.		Average wages per day.		Average wages per hour.		Increase, +, or decrease, —, per day in 1905.		
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	Amt.	Per ct.	
Apprentices	6	12	9	9	\$1.055	\$1.112	\$.117	\$.124	+	\$.057	5.40
Blacksmiths	19	13	9.63	9.38	2.875	2.798	.299	.298	—	.077	2.68
Blacksmiths' helpers.	2	10			1.75		.175				
Blasters	2	10			2.00		.200				
Block makers	39	10			2.75		.275				
Bookkeepers, female.		1		4		1.20		.300			
Carpenters	21	43	9.90	9.91	2.94	2.971	.297	.300	+	.031	1.51
Carvers	4	5	9	8.80	3.25	5.00	.361	.568	+	1.75	53.85
Casters	6	4	10	9	2.50	2.417	.250	.267	—	.083	3.32
Concrete finishers.	12	10			3.00		.300				
Concrete mixers	12	10			2.00		.200				
Crane men	3	4	10	10	2.25	2.063	.225	.206	—	.187	8.31
Crushers	4	10			2.00		.200				
Crushers' helpers	3	10			1.75		.175				
Decorators	13	9	10	9	2.546	2.774	.255	.308	—	.288	11.31
Drillers	86	1	9.84	9	2.00		.203				
Electricians		1		9		2.00		.232			
Engineers	12	16	9.50	9.63	2.571	2.654	.271	.276	+	.083	8.96
Engineers' helpers.	2	10			1.85		.185				
Finishers	6	18	10	9.56	1.778	2.538	.178	.266	+	.760	4.27
Firemen	2	1	9	8	1.75	1.75	.194	.219			
Fitters	5	6	9	9	3.00	3.00	.333	.333			
Foremen	16	14	9.63	9.57	4.064	4.324	.422	.452	+	.260	6.40
Helpers	53	19	9.98	9.47	1.104	1.784	.111	.188	+	.680	7.18
Hoisters	6	10			1.75		.175				
Hookers	4	2	10	10	2.188	2.00	.219	.200	—	.188	8.69
Laborers	424	200	9.99	9.85	1.80	1.797	.181	.183	—	.023	1.28
Letterers	1	9	10	10	3.00	2.639	.300	.264	—	.361	1.20
Machine men	15	43	9	9.54	2.50	2.521	.278	.264	+	.021	.84
Machinists	6	6	9.34	9.17	2.50	2.292	.267	.250	—	.208	8.32
Marble cutters	2		8		1.74		.217				
Mill hands	10	1	10	10	1.75	2.25	.175	.225	+	.50	2.85
Millwrights	4	2	10	10	2.933	2.75	.293	.275	—	.183	6.24
Modelers	1	10			4.00		.40				
Office men	1	10			4.50		.450				
Packers	4	4	9.50	9	1.80	2.105	.180	.234	+	.305	16.9
Painters	1	10			1.67		.167				
Paving cutters	8	16	9	9	3.50	3.50	.389	.389			
Planers	27	8	10	10	2.393	2.45	.239	.245	+	.057	2.38
Polishers	45	47	9	9	1.917	1.896	.213	.211	—	.021	1.09
Quarry foremen	1	10			2.00		.20				
Quarry men	107	97	9.82	9.59	1.838	1.838	.187	.192			
Salesmen		1		10		3.00		.300			
Sawyers	13	10	10	10	2.287	2.215	.229	.232	—	.072	3.15
Setters	12	14	8	8.86	4.00	3.821	.600	.431	—	.179	4.48
Setters' helpers	10	12	8	8	2.00	2.00	.250	.250			
Stone cutters	120	106	8.54	8.42	3.51	3.66	.409	.434	+	.15	4.27
Superintendents		1		10		2.50		.25			
Teamsters	7	11	9.71	9.27	1.833	1.645	.188	.175	—	.188	1.08
Watchmen	1	1	10	12	1.75	1.75	1.75	.146			
Water boys	1	1	10	10	1.00	1.00	.100	.100			
Yardmen	5	6	10	10	2.00	2.00	.200	.200			
Total and average	1,164	764	9.59	9.36	\$2.204	\$2.416	\$.23	\$.258	+	\$.212	9.62

TABLE VII—CLASSIFICATION OF DAILY WAGES.

Classified daily wages, (inclusive).	Total number of persons employed.						Average wages per day.					
	Male.		Female.		Total.		Male.		Female.		Total.	
	1904	1905.	1904.	1905.	1904.	1905.	1904.	1905	1904.	1905.	1904.	1905.
\$.50 to \$.58.	2	.....	.....	.....	2	.....	1.00	.....	.....	.....	1.00	.....
.75 to .83.	6	2	.....	.....	6	2	.763	\$.83	.....	.....	.763	\$.83
.84 to .91.	.....	1	.....	.....	.....	1	.....	.85	.....	.....	.....	.85
1.00 to 1.08.	11	6	.....	.....	11	6	1.00	1.00	.....	.....	1.00	1.00
1.09 to 1.16.	6	.....	.....	.....	6	.....	1.15	.....	.....	.....	1.15	.....
1.17 to 1.24.	4	2	.....	1	4	3	1.20	1.17	.....	\$1.20	1.20	1.18
1.25 to 1.33.	.....	1	.....	.....	.....	1	.....	1.33	.....	.....	.....	1.33
1.34 to 1.41.	.....	6	.....	.....	.....	6	.....	1.35	.....	.....	.....	1.35
1.50 to 1.59.	64	38	.....	.....	64	38	1.50	1.50	.....	.....	1.50	1.50
1.59 to 1.66.	.....	14	.....	.....	.....	14	.....	1.65	.....	.....	.....	1.65
1.67 to 1.74.	4	4	.....	.....	4	4	1.75	1.67	.....	.....	1.75	1.67
1.75 to 1.83.	368	220	.....	.....	368	220	1.781	1.75	.....	.....	1.781	1.75
1.84 to 1.91.	92	9	.....	.....	92	9	1.851	1.849	.....	.....	1.851	1.849
2.00 to 2.03.	241	109	.....	.....	241	109	2.00	2.00	.....	.....	2.00	2.00
2.09 to 2.16.	3	6	.....	.....	3	6	2.10	2.125	.....	.....	2.10	2.125
2.17 to 2.24.	1	3	.....	.....	1	3	2.20	2.18	.....	.....	2.20	2.18
2.25 to 2.33.	34	27	.....	.....	34	27	2.25	2.25	.....	.....	2.25	2.25
2.34 to 2.41.	2	1	.....	.....	2	1	2.38	2.38	.....	.....	2.33	2.38
2.50 to 2.58.	56	52	.....	.....	56	52	2.50	2.50	.....	.....	2.50	2.50
2.59 to 2.66.	2	2	.....	.....	2	2	2.615	2.615	.....	.....	2.615	2.615
2.75 to 2.83.	56	18	.....	.....	56	18	2.75	2.75	.....	.....	2.75	2.75
2.84 to 2.91.	.....	1	.....	.....	.....	1	.....	2.88	.....	.....	.....	2.88
3.00 to 3.08.	88	106	.....	.....	88	106	3.00	3.00	.....	.....	3.00	3.00
3.09 to 3.16.	.....	1	.....	.....	.....	1	.....	3.13	.....	.....	.....	3.13
3.25 to 3.33.	12	6	.....	.....	12	6	3.250	3.263	.....	.....	3.256	3.263
3.42 to 3.49.	1	1	.....	.....	1	1	3.40	3.46	.....	.....	3.40	3.46
3.50 to 3.58.	13	39	.....	.....	13	39	3.50	3.50	.....	.....	3.50	3.50
3.59 to 3.66.	.....	1	.....	.....	.....	1	.....	3.60	.....	.....	.....	3.60
3.75 to 3.83.	.....	1	.....	.....	.....	1	.....	3.75	.....	.....	.....	3.75
4.00 to 4.08.	84	72	.....	.....	84	72	4.00	4.00	.....	.....	4.00	4.00
4.25 to 4.33.	10	.....	.....	.....	10	.....	4.25	.....	.....	.....	4.25	.....
4.34 to 4.41.	3	1	.....	.....	3	1	4.40	4.40	.....	.....	4.40	4.40
4.50 to 4.55.	1	10	.....	.....	1	10	4.50	4.50	.....	.....	4.50	4.50
4.75 to 4.83.	.....	1	.....	.....	.....	1	.....	4.80	.....	.....	.....	4.80
5.00 to 5.08.	.....	1	.....	.....	.....	1	.....	5.00	.....	.....	.....	5.00
12.00 to 12.08.	.....	1	.....	.....	.....	1	.....	12.00	.....	.....	.....	12.00
Total and av.	1,164	763	.....	1	1,164	764	\$2.204	\$2.417	.....	\$1.20	\$2.204	\$2.416

Remarks.—Under this industry are included the quarrying and dressing of building stone and monuments, and the manufacture of cement. The census of 1900 reported 159 establishments in the state engaged in some branch of this industry. The abundant natural deposits of stone and of the materials for cement give promise of a constant growth of the industry in Wisconsin. According to the foregoing tables there was a considerable decrease in the number of employees and in the output in 1905. But the tables are based upon returns from less than one-seventh of the total number of establishments, and probably do not indicate the true condition of the industry in the state. As

far however as the firms which reported are concerned, the decrease in the materials used, the total wages and salaries paid, and the output resulted mainly from the decrease in the average number of employees. But the reason for the employment of fewer workmen in 1905 is difficult to ascertain, especially since the average daily wages paid were \$2.41, an increase of about 10 per cent. over the wages paid in the preceding year. Further, these wages are much higher than the average wages for all industries. Unusual activity in 1904 may of course have resulted in an overstocking of the market, and the consequent dismissal of many of the minor employees in 1905. Employment was somewhat irregular each year, the winter months constituting the period of least activity in the industry. But one woman was employed—a bookkeeper in 1905, working 4 hours per day. The average hours for men were about 9½ per day.

46. STRUCTURAL IRON—8 ESTABLISHMENTS.

TABLE I—MANAGEMENT AND OPERATION.

Classification.	Number in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Number of private firms.....	3	3	.....	.....
Number of male partners.....	5	5	.....	.....
Number of female partners.....	.....	.....	.....	.....
Total number of partners.....	5	5	.....	.....
Number of corporations.....	5	5	.....	.....
Number of male stockholders.....	23	32	+ 4	14.29
Number of female stockholders.....	5	6	+ 1	20.00
Total number of stockholders.....	33	38	+ 5	15.15
Total number of partners and stockholders..	33	43	+ 5	13.16
Smallest number of persons employed.....	423	398	— 25	5.91
Greatest number of persons employed.....	576	687	+ 111	19.27
Average number of persons employed.....	492	611	+ 119	24.19
Average days in operation.....	298	303	+ 5	1.68

TABLE II—INVESTMENT.

Classification.	Capital invested in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Land	\$150,750 37	\$156,231 59	+ \$5,481 22	3.64
Buildings and fixtures	171,533 21	194,476 79	+ 22,943 58	13.33
Machinery, etc.	282,424 67	294,713 40	+ 12,288 73	4.35
Cash and other capital.....	377,034 85	401,929 65	+ 24,894 80	6.60
Total	\$981,743 10	\$1,047,351 43	+ \$65,608 33	6.68

TABLE III A—VALUE OF MATERIALS AND LABOR EMPLOYED, AND OF PRODUCT.

Classification.	Value of material used, wages and salaries paid in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Raw material used	\$793,367 63	\$998,312 73	+\$200,445 10	25.11
Other material used.....	84,836 22	98,220 88	+ 13,384 66	15.78
Wages	229,723 04	285,780 85	+ 56,057 81	24.40
Salaries	77,152 06	84,092 85	+ 6,940 79	9.00
Profit and minor expenses.....	182,639 48	220,302 79	+ 37,663 31	20.62
Goods made and work done..	\$1,372,718 43	\$1,687,210 10	+\$314,491 67	22.91

TABLE III B—ANALYSIS OF TABLE III A.

Classification,	1904.	1905.
Goods made and work done (gross product).....	\$1,372,718 43	\$1,687,210 10
Value of stock used and material consumed in pro- duction	883,203 85	1,097,033 61
Industry product (gross production less value of stock and material)	489,514 58	590,176 49
Wages and salaries (Labor's direct share of product)	306,875 10	369,873 70
Profit and minor expense fund (industry product less wages)	182,639 48	220,302 79
Percentage of industry product paid in wages.....	Per cent. 62.69	Per cent. 62.67
Percentage of industry product devoted to profit and minor expenses	37.31	37.33

TABLE IV—AVERAGE CAPITAL, ETC., PER EMPLOYEE.

Classification.	Average capital, product and yearly earnings in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent.
Average capital per employee.....	\$1,995 41	\$1,714 16	—\$281 25	14.10
Average product per employee.....	2,790 08	2,761 39	— 28 69	1.03
Average yearly earnings	466 92	467 73	+ 0 81	0.17

TABLE V—RANGE OF EMPLOYMENT AND OF UNEMPLOYMENT.

Months.	Total no. of persons employed in		Percentages of			
	1904.	1905.	Employment in		Unemployment in	
			1904.	1905.	1904.	1905.
January	448	503	77.78	67.70	22.22	32.30
February	432	398	75.00	53.57	25.00	46.43
March	423	502	73.44	67.56	26.56	32.44
April	457	575	79.34	77.39	20.66	22.61
May	494	638	85.77	85.87	14.23	14.13
June	512	613	83.89	82.50	11.11	17.50
July	553	665	96.01	89.50	3.99	10.50
August	553	687	96.01	92.46	3.99	7.54
September	576	690	100.—	91.52	.....	8.48
October	526	743	91.32	100.—	8.68	.....
November	484	686	84.03	92.33	15.97	7.97
December	446	642	77.43	86.41	22.57	13.59
Average	492	611	85.42	82.23	14.58	17.77

TABLE VI—OCCUPATIONS AND WAGES OF EMPLOYEES.

Occupations.	Total no. of persons.		Average hours per day.		Average wages per day.		Average wages per hour.		Increase, +, or decrease, —, per day in 1905.	
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	Amt.	Per ct.
Assemblers		6		10		\$2.292		\$.229		
Blacksmiths	10	7	9.70	10	\$2.768	2.621	.285	.262	— .147	5.31
Boys	3	5	10	10	1.167	1.15	.117	.115	— .017	1.46
Bridge workers	47		9		1.749		.199	.227		
Carpenters	1	7	10	10	1.75	2.286	.175		+ .536	3.06
Catchers	3	2	10	10	1.917	2.00	.192	.200	+ .033	4.33
Coopers	1	1	10	10	1.40	1.40	.140	.140		
Crane operators		15		10		1.933		.193		
Draftsmen	5	5	10	10	2.60	2.36	.260	.236	— .24	9.23
Electricians		1		10		3.90		.390		
Engineers	3	3	9.67	10.33	2.507	2.633	.259	.255	+ .136	5.03
Erectors		44		9.82		4.00		.407		
Firemen	2	2	10	10.30	1.75	2.05	.175	.199	+ .30	1.71
Foremen	1	3	10	10	1.50	2.637	.150	.237	+ 1.117	74.47
Handlers		1		10		2.16		.216		
Heaters	3	9	10	10	2.30	1.60	.230	.160	— .70	30.43
Helpers	24	83	9.83	10	1.581	1.562	.161	.156	— .019	1.20
Helpers, female	1		8.50			.83		.098		
Inspectors		1		10		3.60		.36		
Iron workers	133	102	10	10	1.757	1.839	.176	.184	+ .032	4.67
Laborers	177	129	9.64	10	1.333	1.62	.144	.162	+ .332	23.92
Loaders		1		10		2.25		.225		
Machine tenders	39		10		1.815		.182			
Machinists	45	40	9.35	10	2.606	2.315	.289	.232	— .291	11.17
Molders		6		9		2.00		.222		
Oilers	6	5	10	10	1.333	1.41	.133	.141	+ .027	1.95
Packers	3	2	10	10	1.733	1.90	.173	.190	+ .167	9.64
Packers, female		6		10		.599		.060		
Painters		5		10		1.60		.160		
Pattern makers	1	1	9	10	2.79	3.50	.389	.250	+ .71	25.45
Polishers		1		10		1.90		.190		
Press hands	17	13	10	10	1.492	1.433	.149	.143	— .059	3.95
Press hands, female	7	9	10	10	.714	.657	.071	.066	— .057	7.93
Punchers		12		10		1.746		.175		
Riveters		9		10		2.363		.236		
Rivet makers		1		10		1.70		.170		
Rollers	1	1	10	10	2.00	2.00	.200	.200		
Sawyers		1		10		1.85		.185		
Shearers		1		10		1.85		.185		
Shipping clerks		1		10		1.85		.185		
Sorters, female	6	2	10	10	.61	.87	.061	.087	+ .16	26.23
Store keepers	1	1	9	10	1.53	1.85	.17	.185	+ .32	20.92
Straighteners		2		10		1.85		.185		
Teamsters	5	6	10	10.17	1.774	1.867	.177	.183	+ .093	5.24
Templet makers	10	11	9.20	10	2.495	2.818	.271	.282	+ .323	12.94
Tool setters	1	1	10	10	1.90	2.00	.19	.20	+ .10	5.26
Watchmen	5	8	10.80	10.88	1.73	1.721	.160	.158	— .009	.58
Weighers	1	1	10	10	2.00	2.00	.200	.200		
Total and av.	567	573	9.72	9.82	\$1.71	\$1.96	\$.186	\$.20	+ \$.25	14.62

TABLE VII—CLASSIFICATION OF DAILY WAGES.

Classified daily wages, (inclusive.)	Total number of persons employed.						Average wages per day.					
	Male.		Female.		Total.		Male.		Female.		Total.	
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.
\$.50 to \$.58.	2	5	5	6	7	11	\$.50	\$.50	\$.516	\$.50	\$.511	\$.50
.59 to .63.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.67 to .74.	1	1	3	4	4	5	.67	.67	.67	.67	.67	.67
.75 to .83.	.....	.....	6	2	6	3	.....	.83	.817	.75	.83	.777
.84 to .91.	10	1	.....	4	10	5	.90	.90	.....	.87	.90	.876
.92 to .99.	1	.....	.....	.....	1	.....	.99	.....	.....	.....	.99	.....
1.00 to 1.08.	9	8	.....	.....	9	8	1.036	1.00	.....	.....	1.036	1.00
1.09 to 1.16.	8	3	.....	.....	8	3	1.11	1.10	.....	.....	1.11	1.10
1.17 to 1.24.	1	.....	.....	.....	1	.....	1.20	.....	.....	.....	1.20	.....
1.25 to 1.33.	79	22	.....	.....	79	22	1.29	1.251	.....	.....	1.29	1.251
1.34 to 1.41.	29	3	.....	.....	29	3	1.388	1.383	.....	.....	1.383	1.383
1.42 to 1.49.	7	3	.....	.....	7	3	1.469	1.45	.....	.....	1.469	1.45
1.50 to 1.58.	126	83	.....	.....	123	88	1.502	1.50	.....	.....	1.502	1.50
1.59 to 1.66.	45	90	.....	.....	45	90	1.629	1.603	.....	.....	1.629	1.603
1.67 to 1.74.	14	15	.....	.....	14	15	1.698	1.70	.....	.....	1.698	1.70
1.75 to 1.83.	57	95	.....	.....	57	95	1.763	1.754	.....	.....	1.763	1.754
1.84 to 1.91.	23	19	.....	.....	23	19	1.869	1.866	.....	.....	1.869	1.866
1.92 to 1.99.	2	3	.....	.....	2	3	1.965	1.76	.....	.....	1.965	1.76
2.00 to 2.08.	47	53	.....	.....	47	53	2.006	2.00	.....	.....	2.006	2.00
2.09 to 2.16.	1	5	.....	.....	1	5	2.16	2.12	.....	.....	2.16	2.12
2.17 to 2.24.	4	7	.....	.....	4	7	2.20	2.196	.....	.....	2.20	2.196
2.25 to 2.33.	23	29	.....	.....	23	29	2.252	2.252	.....	.....	2.252	2.252
2.34 to 2.41.	7	4	.....	.....	7	4	2.39	2.40	.....	.....	2.39	2.40
2.50 to 2.58.	11	20	.....	.....	11	20	2.50	2.50	.....	.....	2.50	2.50
2.59 to 2.66.	6	1	.....	.....	6	1	2.617	2.60	.....	.....	2.617	2.60
2.67 to 2.74.	1	2	.....	.....	1	2	2.70	2.685	.....	.....	2.70	2.685
2.75 to 2.83.	11	16	.....	.....	11	16	2.767	2.75	.....	.....	2.767	2.75
2.84 to 2.91.	.....	1	.....	.....	.....	1	.....	2.90	.....	.....	.....	2.90
2.92 to 2.99.	1	1	.....	.....	1	1	2.93	2.95	.....	.....	2.93	2.95
3.00 to 3.08.	10	10	.....	.....	10	10	3.001	3.00	.....	.....	3.001	3.00
3.09 to 3.16.	1	2	.....	.....	1	2	3.15	3.13	.....	.....	3.15	3.13
3.25 to 3.33.	3	1	.....	.....	3	1	3.283	3.25	.....	.....	3.283	3.25
3.34 to 3.41.	1	1	.....	.....	1	1	.....	3.35	.....	.....	.....	3.35
3.50 to 3.58.	1	4	.....	.....	1	4	3.50	3.50	.....	.....	3.50	3.50
3.59 to 3.66.	11	1	.....	.....	11	1	3.60	3.60	.....	.....	3.60	3.60
3.75 to 3.83.	1	1	.....	.....	1	1	3.75	.....	.....	.....	3.75	.....
3.84 to 3.91.	.....	1	.....	.....	.....	1	.....	3.90	.....	.....	.....	3.90
4.00 to 4.08.	.....	45	.....	.....	.....	45	.....	4.00	.....	.....	.....	4.00
Total and av.	553	561	14	17	567	573	\$1.738	\$1.998	\$6.78	\$.662	\$1.71	\$1.06

Remarks.—The manufacture of structural iron is a branch of the iron and steel industry that seems destined to increase in importance from year to year. A remarkable gain for 1905 is indicated by the foregoing tables. There was an average increase of 7 per cent. in all items of investment, of 24 per cent. in the number of employees, of 23 per cent. in the materials used, and of 25 per cent. in the output. The average daily wages paid were nearly 15 per cent. higher in 1905. Labor's share of the industry product was large—63 per cent. Employment was very irregular, the summer months being the period

of greatest activity in the industry. Very few women were employed—14 in 1904, and 17 in 1905. About half worked in occupations peculiar to the industry. With one exception, their hours of labor were uniformly 10 per day. Their daily wages were much lower than the average for women in all industries.

47. TRUNKS AND VALISES—6 ESTABLISHMENTS.

TABLE I—MANAGEMENT AND OPERATION.

Classification.	Number in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Percent.
Number of private firms				
Number of male partners				
Number of female partners				
Total number of partners				
Number of corporations	6	6		
Number of male stockholders	53	53		
Number of female stockholders	12	12		
Total number of stockholders	65	65		
Total number of partners and stockholders ..	65	65		
Smallest number of persons employed	340	374	+ 34	10.—
Greatest number of persons employed	447	417	— 30	6.71
Average number of persons employed	397	395	— 2	0.50
Average days in operation	286	298	+ 12	4.20

TABLE II—INVESTMENT.

Classification.	Capital invested in		Increase, +, or decrease, —, in 1905	
	1904.	1905.	Amount.	Percent.
Land	\$48,000 00	\$49,000 00	+ \$1,000 00	2.08
Buildings and fixtures	85,075 00	86,120 00	+ 1,045 00	1.23
Machinery, etc.,	64,710 00	65,550 50	+ 840 50	1.30
Cash and other capital	433,889 34	457,634 40	+ 23,745 06	5.47
Total	\$631,674 34	\$658,304 90	+ \$26,630 56	4.22

TABLE III A—VALUE OF MATERIALS AND LABOR EMPLOYED, AND OF PRODUCT.

Classification.	Value of material used, wages and salaries paid in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent.
Raw material used	\$409,400 00	\$452,330 00	+ \$42,930 00	10.49
Other material used	5,800 00	6,350 00	+ 550 00	9.48
Wages	165,688 00	167,847 48	+ 2,159 48	1.30
Salaries	83,550 00	84,750 00	+ 1,200 00	1.44
Profit and minor expenses ...	160,825 60	163,522 52	+ 2,696 92	1.68
Goods made and work done ..	825,263 60	874,800 00	+ 49,536 40	6.00

TABLE III B—ANALYSIS OF TABLE III A.

Classification.	1904.	1905.
Goods made and work done (gross production)		
Value of stock used and material consumed in production	\$825,263 60	\$874,800 00
Industry product (gross production less value of stock and material)	415,200 00	458,680 00
Wages and salaries (Labor's direct share of product)	410,063 60	416,120 00
Profit and minor expense fund (industry product less wages)	249,233 00	252,597 48
	160,825 60	163,522 52
Percentage of industry product paid in wages	Per cent. 60.78	Per cent. 60.94
Percentage of industry product devoted to profit and minor expenses	39.22	39.05

TABLE IV—AVERAGE CAPITAL, ETC., PER EMPLOYEE.

Classification.	Average capital, product and yearly earnings in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent.
Average capital per employee	\$1,561 12	\$1,666 59	+ \$75 47	4.74
Average product per employee	2,079 00	2,214 63	+ 135 63	6.53
Average yearly earnings	417 35	424 93	+ 7 58	1.82

TABLE V—RANGE OF EMPLOYMENT AND OF UNEMPLOYMENT.

Months.	Total no. of persons employed in		Percentages of			
	1904.	1905.	Employment in		Unemployment in	
			1904.	1905.	1904.	1905.
January	441	389	98.66	93.28	1.34	6.72
February	441	404	98.66	96.88	1.34	3.12
March	447	400	100.—	95.92	.....	4.08
April	425	390	95.08	93.52	4.92	6.48
May	410	390	91.72	93.52	8.28	6.48
June	399	377	89.26	90.41	10.74	9.59
July	401	374	89.71	89.69	10.29	10.31
August	367	379	82.10	90.89	17.90	9.11
September	362	396	80.93	94.96	19.02	5.04
October	340	414	76.06	92.23	23.94	0.72
November	353	417	78.97	100.—	21.03	.....
December	374	412	83.67	98.80	16.33	1.20
Average	397	395	88.81	94.72	11.19	5.28

TABLE VI—OCCUPATIONS AND WAGES OF EMPLOYEES.

Occupations.	Total no. of persons.		Average hours per day.		Average wages per day.		Average wages per hour.		Increase, +, or decrease, —, per day in 1905		
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	Amt.	Per ct.	
Apprentices	21	5	10	10	\$.751	\$.95	\$.075	\$.095	+	\$.199	26.50
Bagfitters	1		10		2.33		.233				
Bagmakers	11	13	10	10	1.235	1.33	.124	.133	+	.095	7.63
Band-saw operators ..	1	1	10	10	2.50	2.50	.250	.250			
Boxmakers	8	19	10	10	1.513	1.798	.151	.180	—	.015	.83
Boxnailers	3	3	10	10	2.50	2.50	.250	.250			
Engineers	3	2	10	10	2.25	2.375	.225	.233	+	.125	5.55
Foremen	10	6	10	10	3.00	3.00	.300	.300			
Framers	2		10		1.875		.185				
Handle makers, fe- male	9	1	10	10	.967	1.50	.097	.150	+	.533	55.12
Helpers	48	39	10	10	1.248	1.069	.125	.107	—	.179	14.33
Helpers, female	25	78	10	10	.660	.723	.066	.072	+	.033	9.55
Iron cutters	1	1	10	10	2.00	1.90	.200	.190	—	.100	5.00
Laborers		30		10	1.45		.145				
Leather cutters	40	37	10	10	1.73	1.867	.173	.187	+	.137	7.92
Liners		5		10		.75		.075			
Liners, female	67	23	10	10	.76	.846	.076	.085	+	.080	11.32
Lumber cutters		1		10		2.35		.235			
Machine operators ...	12	6	10	10	1.722	1.125	.172	.113	—	.597	34.67
Machine operators, fe- male		12		10		1.00		.100			
Machinists	1	1	10	10	2.50	2.50	.250	.250			
Packers	4	3	10	10	1.875	2.083	.188	.208	+	.208	11.09
Painters	3	3	10	10	1.70	1.696	.170	.170	—	.004	.24
Stickers	1	1	10	10	2.50	2.50	.250	.250			
Stock clerks	2	1	10	10	1.675	1.35	.168	.135	—	.325	19.40
Suit case makers ...	32	28	10	10	1.784	1.961	.178	.196	+	.177	9.89
Suit case makers, fe- male	1	2	10	10	1.25	1.25	.125	.125			
Teamsters	2	3	10	10	1.75	1.637	.175	.167	—	.082	4.74
Telescope makers		3		10		1.033		.103			
Telescope makers, fe- male	2	2	10	10	.96	.85	.096	.085	—	.110	11.46
Tray makers	1	1	10	10	1.75	1.75	.175	.175			
Trimmers		1		10		2.00		.200			
Trunk finishers	30	33	10	10	2.155	2.126	.216	.213	—	.029	1.35
Trunk makers	69	35	10	10	1.544	1.88	.154	.188	+	.336	21.76
Watchmen	2	2	11	11	1.50	1.50	.136	.136			
Wood workers	10	10	10	10	1.85	2.01	.185	.201	+	.160	8.65
Total	422	421	10.01	10.01	\$1.431	\$1.46	\$.143	\$.146	+	\$.029	2.03

TABLE VII—CLASSIFICATION OF DAILY WAGES.

Classified daily wages, (inclusive).	Total number of persons em- ployed.						Average wages per day.					
	Male.		Female.		Total.		Male.		Female.		Total.	
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.
\$.34 to \$.41.	5	.....	25	7	30	4	.....	.....	.....	.....	.....	.....
.50 to .58.	.....	5	.....	14	19	7	.....	.....	.....	.....	.....	.....
.59 to .66.	7	.....	6	9	13	11	.....	.....	.....	.....	.....	.....
.67 to .74.	.....	7	.....	43	50	52	.....	.....	.....	.....	.....	.....
.75 to .83.	10	.....	9	3	9	3	.....	.....	.....	.....	.....	.....
.84 to .91.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.92 to .99.	.....	.....	1	.....	1	.....	.....	.....	.....	.....	.....	.....
1.00 to 1.08.	16	.....	21	36	37	56	.....	.....	.....	.....	.....	.....
1.09 to 1.16.	22	.....	1	.....	22	1	.....	.....	.....	.....	.....	.....
1.17 to 1.24.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1.25 to 1.33.	31	.....	33	1	32	33	.....	.....	.....	.....	.....	.....
1.34 to 1.41.	1	.....	10	.....	1	16	.....	.....	.....	.....	.....	.....
1.42 to 1.50.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1.51 to 1.58.	46	.....	25	1	2	47	.....	.....	.....	.....	.....	.....
1.59 to 1.66.	31	.....	4	.....	31	4	.....	.....	.....	.....	.....	.....
1.67 to 1.74.	6	.....	9	.....	6	9	.....	.....	.....	.....	.....	.....
1.75 to 1.83.	45	.....	53	.....	45	53	.....	.....	.....	.....	.....	.....
1.84 to 1.91.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1.92 to 2.00.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
2.01 to 2.08.	45	.....	34	.....	45	34	.....	.....	.....	.....	.....	.....
2.09 to 2.16.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
2.17 to 2.24.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
2.25 to 2.33.	30	.....	28	.....	30	28	.....	.....	.....	.....	.....	.....
2.34 to 2.41.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
2.42 to 2.50.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
2.51 to 2.58.	13	.....	16	.....	13	16	.....	.....	.....	.....	.....	.....
2.59 to 2.66.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
2.67 to 2.74.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
2.75 to 2.83.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
2.84 to 2.91.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
2.92 to 3.00.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
3.01 to 3.08.	10	.....	7	.....	10	7	.....	.....	.....	.....	.....	.....
3.09 to 3.16.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
3.17 to 3.24.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
3.25 to 3.33.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total ...	318	303	104	118	422	421	\$1.649	\$1.72	\$.762	\$.792	\$1.431	\$1.46

Remarks.—The manufacture of trunks and valises is a natural outgrowth of the lumber, leather, and iron industries of the state. This industry shows a very satisfactory gain for 1905. There was an average increase of 4 per cent. in all items of investment, of 12 per cent. in the average number of days of operation, of 10 per cent. in the materials used, and of 6 per cent. in the output. Employment was very irregular in 1904, but much more uniform in 1905. The busy season for this industry was during the winter months. About one-quarter of the total number of employees were women. The majority of these worked in occupations peculiar to the industry. The hours of all employees except watchmen were 10 per day. The daily wages were considerably lower than the average wages for all industries, in spite of an increase of about 2 per cent. in 1905.

48. WAGONS—43 ESTABLISHMENTS.

TABLE I—MANAGEMENT AND OPERATION.

Classification.	Number in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Number of private firms	25	25	.....	.....
Number of male partners	37	36	— 1	2.70
Number of female partners	4	4	.....	.....
Total number of partners	41	40	— 1	2.44
Number of corporations	18	18	.....	.....
Number of male stockholders	254	288	+ 34	13.39
Number of female stockholders	146	171	+ 25	17.12
Total number of stockholders	400	459	+ 59	14.75
Total number of partners and stockholders	441	499	+ 58	13.15
Smallest number of persons employed	2,417	2,615	+ 198	8.19
Greatest number of persons employed	2,632	2,922	+ 290	9.99
Average number of persons employed	2,480	2,772	+ 292	11.77
Average days in operation	291	300	+ 9	3.09

TABLE II—INVESTMENT.

Classification.	Capital invested in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Land	\$495,467 45	\$416,752 28	— \$78,715 17	15.89
Buildings and fixtures	1,069,588 23	917,376 06	— 152,212 17	14.23
Machinery, etc.,	604,293 23	545,679 80	— 58,613 43	9.70
Cash and other capital	4,448,970 02	4,424,661 42	— 24,308 60	0.55
Total	\$6,618,318 93	\$6,304,469 56	— \$313,849 37	4.74

TABLE III A—VALUE OF MATERIALS AND LABOR EMPLOYED, AND OF PRODUCT.

Classification.	1904.		1905.	
Classification.	Value of material used, wages and salaries paid in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Raw material used	\$2,572,781 39	\$3,368,363 91	+ \$795,587 52	30.92
Other material used	234,701 36	315,171 85	+ 90,470 49	40.26
Wages	1,199,468 11	1,425,641 58	+ 226,173 47	18.83
Salaries	265,196 10	303,918 02	+ 38,721 92	14.60
Profit and minor expenses ...	1,023,910 08	1,257,235 10	+ 233,325 02	22.19
Goods made and work done ..	5,291,057 04	6,670,335 46	+ 1,379,278 42	26.07

TABLE III B—ANALYSIS OF TABLE III A.

Classification.	1904.	1905.
Value of goods made and work done (gross product)	\$5,291,057 04	\$6,670,335 46
Value of stock used and other material consumed in production	2,797,482 75	3,633,540 76
Industry product (gross production less value of stock and material)	2,493,574 29	2,986,794 70
Wages and salaries (Labor's direct share of product)	1,464,664 21	1,729,559 60
Profit and minor expense fund (industry product less wages)	1,028,910 08	1,257,235 10
	Per cent.	Per cent.
Percentage of industry product paid in wages	58.74	57.91
Percentage of industry product devoted to profit and minor expenses	41.26	42.09

TABLE IV—AVERAGE CAPITAL, ETC., PER EMPLOYEE.

Classification.	Average capital, product and yearly earnings in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent.
Average capital per employee	\$2,668 68	\$2,274 34	— \$394 34	14.78
Average product per employee	2,133 49	2,406 33	+ 272 84	12.79
Average yearly earnings	483 68	514 13	+ 30 47	6.30

TABLE V—RANGE OF EMPLOYMENT AND OF UNEMPLOYMENT.

Months.	Total no. of persons employed in		Percentages of			
			Employment in		Unemployment in	
	1904.	1905.	1904.	1905.	1904.	1905.
January	2,433	2,652	91.40	90.76	8.60	9.24
February	2,423	2,615	91.02	89.49	8.98	10.51
March	2,516	2,700	94.52	92.40	5.48	7.60
April	2,442	2,711	91.74	92.78	8.26	7.22
May	2,423	2,762	91.02	94.52	8.98	5.48
June	2,417	2,734	90.80	93.57	9.20	6.43
July	2,452	2,786	92.11	95.35	7.89	4.65
August	2,449	2,827	92.00	96.75	8.00	3.25
September	2,484	2,845	93.31	97.96	6.69	2.64
October	2,477	2,888	93.05	98.84	6.95	1.16
November	2,583	2,922	97.03	100.—	2.97	.....
December	2,632	2,907	100.—	99.49	.....	0.51
Average	2,480	2,772	93.10	94.87	6.84	5.13

TABLE IV—OCCUPATIONS AND WAGES OF EMPLOYEES.

Occupations.	Total no. of persons,		Average hours per day.		Average wages per day.		Average wages per hour.		Increase, +, or decrease, —, per day in 1905.	
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	Amt	Per ct.
Apprentices	9	7	10.00	9.71	\$.867	\$.536	\$0.087	\$0.055	—\$0.331	38.18
Assemblers	18	21	10.00	10.00	1.676	1.678	.168	.168	+ .002	0.12
Bench hands	72	62	10.00	10.00	2.204	2.097	.22	.21	— .107	4.85
Blacksmiths	224	221	9.98	9.98	2.325	2.415	.233	.242	+ .09	3.87
Blacksmiths' helpers.	77	157	10.00	10.00	1.606	1.658	.161	.166	+ .052	3.24
Body makers	54	61	10.00	10.00	2.172	2.266	.217	.227	+ .094	4.33
Body makers' helpers	5	6	10.00	10.00	1.54	1.60	.154	.16	+ .06	3.90
Bookkeepers, female.	1	1	7.00	8.00	.75	1.70	.107	.213	+ .95	126.67
Boxmakers	10	10	10.00	10.00	2.083	2.083	.208	.208	.....	.....
Boys	11	12	10.00	10.00	.777	.775	.078	.078	— .002	0.26
Carpenters	144	74	10.00	10.00	1.902	1.832	.19	.183	— .07	3.68
Craters	12	14	10.00	10.00	1.54	1.512	.154	.151	— .028	1.82
Cutters	1	1	10.00	10.00	2.25	2.00	.225	.20	— .25	11.11
Die makers	1	.....	10.00	.....	2.75	.....	.275	.....	.....	.....
Electricians	.....	1	.....	10.00	.....	2.00	.....	.20	.....	.....
Elevator men	6	6	10.00	10.00	1.25	1.25	.125	.125	.....	.....
Engineers	8	10	10.00	10.20	2.128	2.435	.213	.239	+ .307	14.43
Finishers	1	6	10.00	10.00	2.00	1.833	.20	.183	— .167	8.35
Firemen	6	9	10.00	10.00	1.75	1.683	.175	.168	— .067	3.83
Foremen	5	15	10.00	10.00	1.76	2.383	.176	.238	+ .623	35.40
Helpers	190	103	9.98	9.97	1.418	1.416	.142	.142	— .002	0.14
Helpers, female	16	16	10.00	9.97	.855	.848	.086	.085	— .007	0.82
Hub banders	.....	1	.....	10.00	.....	5.00	.....	.50	.....	.....
Inspectors	.....	3	.....	10.00	.....	2.00	.....	.20	.....	.....
Laborers	506	704	10.00	10.00	1.499	1.56	.15	.156	+ .051	4.07
Machine operators	346	271	10.00	10.00	1.777	1.811	.178	.181	+ .034	1.91
Machine operators' helpers	29	32	10.00	10.00	1.197	1.263	.12	.123	+ .066	5.51
Machinists	111	143	10.00	10.00	2.094	2.113	.209	.211	+ .019	0.91
Machinists' helpers	2	4	10.00	10.00	1.635	1.65	.163	.165	+ .025	1.54
Molders	13	13	10.00	10.00	1.923	1.84	.192	.184	— .083	4.32
Molders' helpers	.....	1	.....	10.00	.....	1.25	.....	.125	.....	.....
Painters	381	404	9.98	9.97	2.17	2.267	.217	.227	+ .097	4.47
Painters' helpers	3	9	10.00	10.00	1.15	1.333	.115	.133	+ .183	15.91
Pattern makers	1	.....	10.00	.....	2.25	.....	.225	.....	.....	.....
Piece workers	10	.....	10.00	.....	2.02	.....	.20	.....	.....	.....
Shaft makers	.....	3	.....	10.00	.....	2.00	.....	.20	.....	.....
Shapers	.....	76	.....	10.00	.....	1.803	.....	.18	.....	.....
Shippers	80	20	10.00	10.00	1.748	1.825	.175	.183	+ .077	.441
Spring makers	9	9	8.00	8.00	3.90	4.083	.483	.51	+ .183	4.69
Spring makers' helpers	12	12	8.00	8.00	2.004	2.125	.251	.266	+ .121	6.04
Steamfitters	4	5	10.00	10.00	2.00	2.14	.20	.214	+ .14	7.00
Steamfitters' helpers	2	3	10.00	10.00	1.50	1.50	.15	.15	.....	.....
Stitchers, female	13	12	10.00	10.00	1.323	1.288	.132	.129	— .035	2.65
Teamsters	11	18	10.00	10.00	1.842	1.974	.184	.197	+ .132	7.17
Timekeepers	1	1	10.00	10.00	2.00	2.00	.20	.20	.....	.....
Tire setters	7	7	10.00	10.00	1.936	2.80	.194	.28	+ .864	44.63
Tire setters' helpers	6	7	10.00	10.00	1.25	1.25	.125	.125	.....	.....
Trimmers	75	79	10.00	10.00	2.16	2.498	.216	.25	+ .338	15.65
Trimmers, female	2	2	10.00	10.00	1.50	1.50	.15	.15	.....	.....
Trimmers' helpers	.....	21	.....	10.00	.....	1.286	.....	.129	.....	.....
Wagon makers	11	15	10.00	9.87	1.833	1.945	.183	.197	+ .112	6.11
Watchmen	6	8	10.67	10.25	1.778	1.79	.167	.175	+ .012	0.67
Wheelwrights	34	38	10.00	10.00	2.254	2.344	.225	.234	+ .09	3.99
Wheelwrights' helpers	9	12	10.00	10.00	1.25	1.25	.125	.125	.....	.....
Wood workers	42	72	9.93	9.96	1.923	1.753	.194	.176	— .17	8.84
Total	2,600	2,818	9.98	9.98	\$1.841	\$1.88	\$.184	\$.188	+ \$.039	2.12

TABLE VII—CLASSIFICATION OF DAILY WAGES.

Classified daily wages, (inclusive).	Total number of persons employed.						Average wages per day.					
	Male.		Female.		Total.		Male.		Female.		Total.	
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.
\$.42 to \$.49..	1				1		\$.45					\$.45
.50 to .58..	9				9		.50					.50
.59 to .66..	5	4			5	4	.60			\$.60		.60
.67 to .74..	3	3		1	4	3	.67			\$.67		.67
.75 to .83..	46	42	10	10	56	52	.756	.76	.75	.75	.755	.758
.84 to .91..	10	1	1		11	1	.868	.85	.90		.871	.85
1.00 to 1.08..	89	76	5	4	94	80	1.00	1.00	1.00	1.018	1.00	1.001
1.09 to 1.16..	6	3	2	1	8	4	1.132	1.133	1.13	1.09	1.131	1.123
1.17 to 1.24..	7	3			7	3	1.183	1.17			1.183	1.17
1.25 to 1.33..	108	143			108	151	1.257	1.261		1.258	1.257	1.261
1.34 to 1.41..	59	31	8	3	67	34	1.366	1.376	1.35	1.40	1.364	1.378
1.42 to 1.49..	1				1		1.45				1.45	
1.50 to 1.58..	734	697	5	3	739	700	1.50	1.50	1.50	1.50	1.50	1.50
1.59 to 1.66..	97	103			97	103	1.628	1.625			1.628	1.625
1.67 to 1.74..	50	52		1	50	53	1.676	1.672		1.70	1.676	1.673
1.75 to 1.83..	308	424			308	424	1.758	1.756			1.758	1.756
1.84 to 1.91..	23	19			23	19	1.883	1.879			1.883	1.879
1.92 to 1.99..	7				7		1.94				1.94	
2.00 to 2.08..	311	351			311	351	2.00	2.00			2.00	2.00
2.09 to 2.16..	37	8			37	8	2.109	2.133			2.109	2.133
2.17 to 2.24..	3	6			3	6	2.17	2.18			2.17	2.18
2.25 to 2.33..	155	250			155	250	2.257	2.253			2.257	2.253
2.34 to 2.41..	45	54			45	54	2.398	2.375			2.398	2.375
2.42 to 2.49..		25				25		2.454				2.454
2.50 to 2.58..	226	227			226	227	2.50	2.50			2.50	2.50
2.59 to 2.66..	27	53			27	53	2.601	2.602			2.601	2.602
2.67 to 2.74..	1	1			1	1	2.67	2.67			2.67	2.67
2.75 to 2.83..	71	81			71	81	2.763	2.762			2.763	2.762
2.92 to 2.99..		1				1		2.95				2.95
3.00 to 3.08..	76	60			76	60	3.00	3.00			3.00	3.00
3.09 to 3.16..	1				1		3.10				3.10	
3.17 to 3.24..	3	2			3	2	3.20	3.17			3.20	3.17
3.25 to 3.33..	5	11			5	11	3.292	3.272			3.292	3.272
3.34 to 3.41..	3				3		3.40				3.40	
3.50 to 3.58..	11	16			11	16	3.50	3.50			3.50	3.50
3.67 to 3.74..	1				1		3.70				3.70	
4.00 to 4.08..	15	13			15	13	4.00	4.00			4.00	4.00
4.17 to 4.24..	3				3		4.20				4.20	
4.25 to 4.33..	2				2		4.30				4.30	
4.50 to 4.58..	5	15			5	15	4.50	4.50			4.50	4.50
5.00 to 5.08..	2	3			2	3	5.00	5.00			5.00	5.00
6.00 to 6.08..	1	1			1	1	6.00	6.00			6.00	6.00
7.00 to 7.08..	1				1		7.00				7.00	
Total ...	2,568	2,767	32	31	2,600	2,818	\$1.85	\$1.889	\$1.082	\$1.088	\$1.841	\$1.88

Remarks.—The census of 1900 gave Wisconsin seventh place among the states in the value of the output of this industry. The tables show that a marked growth was experienced in the two years covered by the report. This is indicated by the increase in 1905 of 12 per cent. in the number of employees, of 31 per cent. in the materials used, of 18 per cent. in the total wages and salaries paid, and of 26 per cent. in the output. The

average yearly earnings also show a gain of 6 per cent. The apparent average decrease of 5 per cent. in all items of investment is, in view of these increases, probably due to an error in reporting the actual value of the land, buildings, and machinery in one or both of the two years. Employment was quite uniform from month to month. Less than 2 per cent. of the total number of employees were females. The majority of these were employed in the regular occupations of the industry. Their average daily wages were considerably higher than the average for women in all industries.

49. WOODENWARE—6 ESTABLISHMENTS.

TABLE I—MANAGEMENT AND OPERATION.

Classification.	Number in		Increase, +, or decrease, --, in 1905.	
	1904.	1905.	Amount.	Per cent.
Number of private firms	3	3	.....	.....
Number of male partners	6	6	.....	.....
Number of female partners .....	.....	.....	.....	.....
Total number of partners	6	6	.....	.....
Number of corporations	3	3	.....	.....
Number of male stockholders	19	29	+ 10	52.63
Number of female stockholders	14	11	- 3	21.43
Total number of stockholders	33	40	+ 7	21.21
Total number of partners and stockholders	39	46	+ 7	17.95
Smallest number of persons employed	814	832	+ 18	2.21
Greatest number of persons employed	1,183	1,020	- 163	13.73
Average number of persons employed	1,061	939	- 122	11.50
Average days in operation	266	277	+ 11	4.14

TABLE II—INVESTMENT.

Classification.	Capital invested in		Increase, +, or decrease, --, in 1905.	
	1904.	1905.	Amount.	Per cent.
Land	\$65,642 00	\$72,500 00	+ \$6,858 00	10.45
Buildings and fixtures	119,635 00	121,850 00	+ 2,215 00	1.85
Machinery, etc.,	48,040 00	48,400 00	+ 360 00	0.75
Cash and other capital	209,564 00	199,550 00	- 10,014 00	4.78
Total	\$442,881 00	\$442,300 00	- 581 00	0.13

TABLE III A—VALUE OF MATERIALS AND LABOR EMPLOYED, AND OF PRODUCT.

Classification.	Value of material used, wages and salaries paid in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Raw material used	\$718,256 04	\$636,389 32	— \$81,866 72	11.40
Other material used	54,043 77	50,192 35	— 3,851 42	7.13
Wages	433,473 59	382,307 33	— 51,166 26	11.80
Salaries	45,135 00	34,675 00	— 10,460 00	23.17
Profit and minor expenses ...	329,395 14	295,630 20	— 33,764 94	10.25
Goods made and work done .	1,580,303 54	1,399,194 20	— 181,109 34	11.46

TABLE III B—ANALYSIS OF TABLE III A.

Classification.	1904.	1905.
Goods made and work done (gross product).....	\$1,580,303 54	\$1,399,194 20
Value of stock used and material consumed in production	772,299 81	636,581 67
Industry product (gross production less value of stock and material)	808,003 73	712,612 53
Wages and salaries (Labor's direct share of product)	473,608 59	416,982 33
Profit and minor expense fund (industry product less wages)	329,395 14	295,630 20
Percentage of industry product paid in wages.....	Per cent. 59.23	Per cent. 58.51
Percentage of industry product devoted to profit and minor expenses	40.77	41.49

TABLE IV—AVERAGE CAPITAL, ETC., PER EMPLOYEE.

Classification.	Average capital, product and yearly earnings in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent.
Average capital per employee.....	\$4,174 25	\$4,710 33	+\$536 08	12.84
Average product per employee.....	1,489 45	1,490 09	+ 0 64	0.04
Average yearly earnings	408 55	407 13	— 1 42	0.35

TABLE V—RANGE OF EMPLOYMENT AND OF UNEMPLOYMENT.

Months.	Total no. of persons employed in		Percentages of			
			Employment in		Unemployment in	
	1904.	1905.	1904.	1905.	1904.	1905.
January	1,019	857	86.14	84.02	13.86	15.98
February	1,114	852	94.17	81.57	5.83	18.43
March	1,154	868	97.55	85.10	2.45	14.90
April	1,162	908	98.23	89.02	1.77	10.98
May	1,159	902	97.97	88.43	2.03	11.57
June	1,183	913	100.—	89.51	.....	10.49
July	1,095	995	92.56	97.55	7.44	2.45
August	1,087	1,007	91.89	98.73	8.11	1.27
September	1,081	1,020	91.88	100.—	8.62	.....
October	1,024	992	86.56	97.26	13.44	2.74
November	842	997	71.18	97.75	28.82	2.25
December	814	973	68.81	95.88	31.19	4.12
Average	1,061	939	89.69	92.06	10.31	7.94

TABLE VI—OCCUPATIONS AND WAGES OF EMPLOYEES.

Occupations.	Total no. of persons.		Average hours per day.		Average wages per day.		Average wages per hour.		Increase, +, or decrease, —, per day in 1905.	
	1904.	1905.	1904	1905.	1904.	1905.	1904.	1905.	Amt.	Per ct.
	Apprentices	2	9	\$2.00	\$.222
Blacksmiths	3	3	10	.....	\$2.50	2.50	\$.250	.25	.....	.....
Boys	4	11	9.78	9.64	.875	.75	.088	.078	— \$.125	14.29
Carpenters	14	10	10	10	2.036	2.25	.204	.225	+ .214	10.51
Coopers	100	100	10	10	2.00	2.00	.20	.20	.....	.....
Engineers	9	9	10	10	2.40	2.43	.24	.243	+ .030	1.25
Firemen	11	11	10	8.18	1.56	1.569	.156	.192	+ .009	.57
Foremen	3	5	10	10	1.917	1.88	.192	.188	— .037	1.93
Handle finishers	4	4	.....	10	.....	1.50	.....	.15	.....	.....
Headers	140	140	10	10	1.65	1.65	.165	.165	.....	.....
Helpers	1	13	10	10	1.50	1.458	.15	.146	— .042	2.8
Hoopers	14	14	10	7	2.50	2.50	.25	.357	.....	.....
Hoopers' helpers	40	40	10	7	1.50	1.50	.15	.214	.....	.....
Laborers	72	841	9.97	10	1.362	1.432	.137	.148	— .130	8.81
Lathers	120	122	10	7.05	1.50	1.50	.15	.213	.....	.....
Machine tenders	367	10	10	10	1.496	1.54	.15	.154	+ .044	2.94
Machinists	4	6	10	10	2.313	2.058	.231	.206	— .255	11.02
Millwrights	5	5	10	10	2.80	2.80	.28	.28	.....	.....
Painters	50	50	10	10	1.50	1.50	.15	.15	.....	.....
Pattern makers	7	3	9	9	3.423	4.00	.381	.444	+ .571	16.65
Sanders	2	.....	10	.....	1.50	.....	.15	.....	.....	.....
Saw filers	2	.....	10	.....	1.60	.....	.16	.....	.....	.....
Sawyers	13	13	10	10	2.00	2.00	.20	.20	.....	.....
Stave pilers	25	25	10	10	1.50	1.50	.15	.15	.....	.....
Teamsters	42	41	10	10	1.50	1.507	.15	.151	+ .007	.47
Turners	31	30	10	7	2.468	2.50	.247	.337	+ .032	1.80
Warehousemen	12	12	10	10	1.75	1.75	.175	.175	.....	.....
Watchmen	4	4	10	10	1.75	1.75	.175	.175	.....	.....
Yardmen .....	.....	4	.....	10	.....	1.45	.....	.145	.....	.....
Total	1,095	1,031	9.99	9.38	\$1.642	\$1.654	\$.164	\$.176	+ \$.012	.73

TABLE VII—CLASSIFICATION OF DAILY WAGES.

Classified daily wages, (inclusive).	Total number of persons employed.						Average wages per day.					
	Male.		Female.		Total.		Male.		Female.		Total.	
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.
\$.50 to \$.58.	1	2			1	2	\$.50	\$.50			\$.50	\$.50
.67 to .74.		3				3		.70				.70
.75 to .83.	1	4			1	4	.80	.783			.80	.763
.84 to .91.		1				1		.90				.90
1.00 to 1.08.	13	6			13	6	1.008	1.00			1.008	1.00
1.09 to 1.16.		1				1		1.15				1.15
1.17 to 1.24.		2				2		1.20				1.20
1.25 to 1.33.	15	5			15	5	1.273	1.28			1.273	1.28
1.34 to 1.41.	81	22			81	22	1.39	1.38			1.39	1.38
1.42 to 1.49.	5	15			5	15	1.45	1.45			1.45	1.45
1.50 to 1.58.	659	597			659	597	1.50	1.501			1.50	1.501
1.59 to 1.66.	154	155			154	155	1.645	1.645			1.645	1.645
1.75 to 1.83.	20	19			20	19	1.75	1.753			1.75	1.753
1.84 to 1.91.	3	4			3	4	1.87	1.878			1.87	1.878
2.00 to 2.08.	119	122			119	122	2.00	2.00			2.00	2.00
2.25 to 2.33.	15	15			15	15	2.25	2.25			2.25	2.25
2.50 to 2.58.	52	50			52	50	2.50	2.50			2.50	2.50
3.75 to 3.83.	5				5		3.80				3.80	
4.00 to 4.08.		6				6		4.00				4.00
5.00 to 5.08.	1	1			1	1	5.00	5.00			5.00	5.00
6.00 to 6.08.	1	1			1	1	6.00	6.00			6.00	6.00
Total	1,095	1,031			1,095	1,031	\$1.642	\$1.654			\$1.642	\$1.654

Remarks.—The manufacture of woodenware, like the allied industry of staves and headings, seems to have suffered a considerable loss in 1905. It is very possible that in the case of this industry the loss was due partly to the impossibility of securing the usual number of employees during the busy season, owing to the low wages paid. The decrease of 12 per cent. in the average number of employees was followed by a decrease of 11 per cent. in the materials used, of 13 per cent. in the total wages and salaries paid, and of 11 per cent. in the value of the output. There was also a slight loss in the average yearly earnings of employees. Employment was somewhat irregular, summer being the season of greatest activity in this industry. No female help was employed.

50. WOOLEN GOODS—10 ESTABLISHMENTS.

TABLE I—MANAGEMENT AND OPERATION.

Classification.	Number in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Number of private firms.....	3	3		
Number of male partners.....	6	7	+ 1	16.67
Number of female partners.....	3	3		
Total number of partners.....	9	10	+ 1	11.11
Number of corporations.....	7	7	+ 2	28.57
Number of male stockholders.....	57	57		
Number of female stockholders.....	18	18		
Total number of stockholders.....	75	75		
Total number of partners and stockholders..	84	85	+ 1	1.19
Smallest number of persons employed.....	707	666	— 41	5.80
Greatest number of persons employed.....	757	733	— 24	3.17
Average number of persons employed.....	730	704	— 26	3.56
Average number of days in operation.....	294	292	— 2	0.68

TABLE II—INVESTMENT.

Classification.	Capital invested in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Land	\$81,850 00	\$80,725 00	— \$1,125 00	1.37
Buildings and fixtures	165,498 59	151,293 59	— 14,200 00	8.58
Machinery, etc.	354,228 05	335,808 49	— 18,417 56	5.20
Cash and other capital.....	638,990 98	530,769 21	— 108,221 77	18.50
Total	\$1,240,560 62	\$1,085,596 29	—\$151,964 33	12.25

TABLE III A—VALUE OF MATERIALS AND LABOR EMPLOYED, AND OF PRODUCT.

Classification.	Value of material used, wages and salaries paid in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Raw material used	\$347,858 40	\$361,918 52	+ \$14,060 12	1.66
Other material used	104,325 98	107,496 65	+ 3,160 67	3.03
Wages	238,346 54	229,329 98	— 9,016 61	3.78
Salaries	57,244 00	56,745 00	— 499 00	0.87
Profit and minor expenses.....	231,311 43	235,837 77	+ 4,526 34	1.96
Goods made and work done..	\$1,479,066 35	\$1,491,317 87	+ \$12,251 52	0.83

TABLE III B—ANALYSIS OF TABLE III A.

Classification.	1904.	1905.
Goods made and work done (gross product).....	\$1,479,086 35	\$1,491,317 87
Value of stock used and material consumed in production	952,184 38	969,405 17
Industry product (gross production less value of stock and material)	526,901 97	521,912 70
Wages and salaries (Labor's direct share of product)	295,590 54	283,074 93
Profit and minor expense fund (industry product less wages)	231,311 43	235,837 77
Percentage of industry product paid in wages.....	Per cent. 56.10	Per cent. 54.81
Percentage of industry product devoted to profit and minor expenses	43.90	45.19

TABLE IV—AVERAGE CAPITAL, ETC., PER EMPLOYEE.

Classification.	Average capital, product and yearly earnings in		Increase, +, or decrease, -, in 1905.	
	1904.	1905.	Amount.	Per cent.
Average capital per employee.....	\$1,639 40	\$1,546 30	-\$153 10	9.01
Average product per employee.....	2,026 15	2,104 14	+ 77 99	3.85
Average yearly earnings	326 50	325 75	- 0 75	0.23

TABLE V—RANGE OF EMPLOYMENT AND OF UNEMPLOYMENT.

Months.	Total no. of persons employed in		Percentages of			
	1904.	1905.	Employment in		Unemployment in	
			1904.	1905.	1904	1905.
January	752	705	99.34	96.18	0.66	3.82
February	741	731	97.89	99.73	2.11	0.27
March	757	733	100.—	100.—	.....	.....
April	751	731	99.21	99.73	0.79	0.27
May	742	723	98.02	98.64	1.98	1.36
June	719	681	94.98	92.91	5.02	7.09
July	719	666	94.98	90.86	5.02	9.14
August	712	662	94.06	94.54	5.94	5.46
September	708	692	93.53	94.41	6.47	5.59
October	707	684	93.39	93.32	6.61	6.68
November	734	696	96.96	94.93	3.04	5.07
December	721	708	95.25	96.59	4.75	3.41
Average	730	704	96.43	96.04	3.57	3.96

TABLE VI—OCCUPATIONS AND WAGES OF EMPLOYEES.

Occupations.	Total no. of persons.		Average hours per day.		Average wages per day.		Average wages per hour.		Increase, +, or decrease, —, per day in 1905.	
	1901.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	Amt.	Per ct.
Apprentices	2	2	10	10	\$.985	\$.65	\$.069	\$.065	— \$.236	34.01
Balers, female	6		10		.50	.05	.05	.05	— .05	
Bookkeepers	1	1	10	10	1.75	2.00	.175	.20	+ .25	14.29
Bookkeepers, female	6		10		.....	.....	.....	.....	.....	.....
Burlers, female	6		10		.....	.....	.....	.....	.....	.....
Carders	16	14	10	10	1.611	1.34	.161	.134	— .271	16.82
Carders, female	9	4	10	10	.681	.60	.068	.06	— .081	11.89
Carpenters	2	2	10	10	2.50	2.50	.25	.25	.....	.....
Combers, female	9	5	10	10	.739	.76	.074	.076	+ .022	2.97
Drawers, female	32	25	10	10	.715	.694	.072	.069	— .021	2.91
Dressers	5	4	10	10	1.702	1.688	.170	.169	— .012	.71
Dryers		1	10	10	.....	.....	.....	.....	.....	.....
Dyers	9	19	10	10	1.661	1.54	.166	.154	— .121	7.29
Dyers, female	2		10		.50	.05	.05	.05	.....	.....
Engineers	3	4	10	10.25	2.133	1.876	.213	.183	— .257	12.05
Filling carriers	1	1	10	10	1.00	1.00	.10	.10	.....	.....
Finishers	10	5	10	10	1.46	2.20	.146	.22	+ .74	50.69
Finishers, female	5	11	10	10	.674	.773	.073	.077	+ .099	14.69
Firemen	5	5	10	10	1.766	1.816	.177	.182	+ .05	2.83
Foremen	25	25	10	10	2.914	2.85	.291	.285	— .054	2.20
Fullers	1	2	10	10	1.60	1.81	.16	.181	+ .21	13.12
Helpers	34	25	10	10	1.232	1.293	.122	.129	+ .071	5.81
Helpers, female	48	29	10	10	.652	.704	.065	.07	+ .052	7.98
Laborers	51	47	10	10.47	1.347	1.383	.135	.132	— .036	2.67
Laborers, female	13	28	10	10.82	.881	.822	.088	.076	— .059	6.70
Loom fixers	3	1	10	10	2.06	2.13	.206	.213	+ .07	3.40
Machine tenders	96	63	10	10	1.24	1.126	.124	.113	— .114	9.19
Machine tenders, female	94	87	10	10	9.11	.911	.091	.091	.....	.....
Machinists	6	5	10	10	2.058	2.05	.203	.205	— .003	.39
Packers	2	3	10	10	.775	.967	.078	.097	+ .192	24.77
Packers, female	2	1	10	10	.79	.85	.079	.085	+ .06	7.85
Pickers	2	2	10	10	1.50	1.475	.15	.148	— .025	1.67
Piece workers	8	9	10	10	1.58	1.13	.158	.113	— .45	28.48
Piece workers, female	15	13	10	10	1.24	1.13	.124	.113	— .11	8.87
Press tenders, female			10		.....	.80	.....	.08	.....	.....
Reelers, female	14	6	10	10	.815	1.05	.082	.105	+ .235	28.83
Sewers, female	5	10	10	10	1.64	.922	.164	.092	— .713	43.78
Shearers		2	10	10	.....	1.00	.....	.10	.....	.....
Shearers, female		1	10	10	.....	1.00	.....	.10	.....	.....
Shipping clerks	1	1	10	10	1.50	1.90	.150	.19	+ .40	26.67
Sorters	11	8	10	10	1.927	2.125	.193	.213	+ .198	10.23
Sorters		4	10		.....	.70	.....	.07	.....	.....
Speckers, female	4	7	10	10	1.43	1.324	.143	.132	— .106	7.41
Spinners	49	59	10	10.10	.626	.699	.063	.069	+ .073	11.66
Spinners, female	4	14	10	10	.50	.659	.05	.066	+ .159	31.8
Spoolers, female	4		10		1.25	.....	.125	.....	.....	.....
Stock clerks	1		10		2.125	2.193	.213	.219	+ .038	3.2
Teamsters	2	3	10	10	.75	.....	.075	.....	.....	.....
Twisters	1		10		.....	.713	.698	.071	— .015	2.10
Twisters, female	29	27	10	10	.713	.698	.071	.07	— .015	2.10
Warpers		2	10		.....	1.75	.....	.175	.....	.....
Washers	2	5	10	10	1.65	1.54	.165	.154	— .11	6.67
Watchmen	5	6	10.60	11	1.404	1.378	.132	.125	— .026	1.85
Weavers	18	21	10	10.48	1.417	1.362	.142	.13	— .055	3.83
Weavers, female	88	76	10	10.12	1.315	1.166	.132	.115	— .149	11.33
Winders, female	9	12	10	10	.589	.577	.059	.058	— .012	2.04
Total	700	723	10	10.16	\$1.162	\$1.133	\$.116	\$.112	— \$.029	2.50

TABLE VII—CLASSIFICATION OF DAILY WAGES.

Classified daily wages, (inclusive).	Total number of persons employed.						Average wages per day.					
	Male.		Female.		Total.		Male.		Female.		Total.	
	1904	1905	1904	1905	1904	1905	1904	1905	1904	1905	1904	1905
\$.42 to \$.49.			6	7	6	7			\$.45	\$.45	\$.45	\$.45
.50 to .58.	2	9	44	53	53	53	\$.50	\$.50	.50	.508	.50	.508
.59 to .66.	7	7	53	70	60	77	.621	.643	.616	.625	.617	.629
.67 to .74.			60	30	60	39			.699	.70	.699	.70
.75 to .83.	24	20	84	97	108	117	.75	.755	.753	.752	.75	.751
.84 to .91.	12	7	40	30	52	37	.85	.85	.858	.838	.856	.851
.92 to .99.	1		4	2	5	2	.95		.928	.95	.938	.95
1.00 to 1.08.	18	13	30	58	48	71	1.00	1.00	1.00	1.00	1.00	1.00
1.09 to 1.16.	18	27	10	32	28	59	1.127	1.125	1.10	1.117	1.117	1.121
1.17 to 1.24.			2	2	2	4			1.20	1.185	1.20	1.193
1.25 to 1.33.	55	35	11	3	66	38	1.25	1.252	1.25	1.25	1.25	1.252
1.34 to 1.41.	26	17	27	35	53	52	1.368	1.364	1.352	1.39	1.36	1.381
1.42 to 1.49.			1		1				1.45		1.45	
1.50 to 1.58.	68	55	46	5	114	60	1.509	1.50	1.514	1.50	1.51	
1.59 to 1.66.	11	31			11	31	1.627	1.65			1.627	1.65
1.67 to 1.74.	3	2	3		6	2	1.69	1.695	1.70		1.695	1.695
1.75 to 1.83.	16	9		3	16	12	1.755	1.759		1.75	1.755	1.757
1.84 to 1.91.	3	5			3	5	1.85	1.866			1.85	1.866
2.00 to 2.08.	17	20	2	1	19	21	2.006	2.002	2.00	2.00	2.005	2.002
2.09 to 2.16.	2	1		1	2	2	2.125	2.13		2.10	2.125	2.115
2.17 to 2.24.	6		2		8		2.20		2.20		2.20	
2.25 to 2.33.	4	11		1	4	12	2.25	2.25		2.25	2.25	2.25
2.34 to 2.41.	1			2	1	2	2.35			2.375	2.35	2.375
2.50 to 2.58.	6	12	1		7	12	2.50	2.50	2.50		2.50	2.50
2.59 to 2.66.						2		2.60				2.60
2.75 to 2.83.	9	6			9	6	2.75	2.75			2.75	2.75
2.84 to 2.91.	1	1			1	1	2.87	2.88			2.87	2.88
3.00 to 3.08.	6	1			6	1	3.00	3.00			3.00	3.00
3.09 to 3.16.	1	1			1		3.13				3.13	
3.25 to 3.33.	4	2			4	2	3.25	3.25			3.25	3.25
3.34 to 3.41.	1				1		3.40				3.40	
3.50 to 3.58.	4	4			4	4	3.50	3.50			3.50	3.50
3.75 to 3.83.	1				1		3.83				3.83	
5.00 to 5.08.		1				1	5.00				5.00	
Total ...	327	300	433	423	760	723	\$1.521	\$1.517	\$.891	\$.861	\$1.102	\$1.133

Remarks.—This industry has for several years been decreasing in importance in Wisconsin, owing to the decrease in sheep-raising in the state, and to the distance which it is necessary to bring the raw material from other states. For 1905 there was an average decrease of 12 per cent. in all items of investment and of 4 per cent. in the number of employees and in the total wages and salaries paid. There was however a slight increase in the value of the materials used and of the output. Labor's share of the industry product was moderate—56 per cent. Employment was remarkably uniform, unemployment averaging less than 4 per cent. each year. Over half of the total number of employees were females. They were employed in the regular

occupations of the industry. They received about the average daily wages for women in all industries, in 1904, but about 3 per cent. less in 1905. Men's wages were much lower each year than the average for men in all industries. The hours both of men and of women were slightly over 10 per day.

51. MISCELLANEOUS—48 ESTABLISHMENTS.

TABLE I—MANAGEMENT AND OPERATION.

Classification.	Number in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Number of private firms	18	17	— 1	5.56
Number of male partners	28	26	— 2	7.14
Number of female partners				
Total number of partners	28	26	— 2	7.14
Number of corporations	30	31	+ 1	3.33
Number of male stockholders	336	319	— 17	5.03
Number of female stockholders	45	49	+ 4	8.89
Total number of stockholders	381	368	— 13	3.41
Total number of partners and stockholders	409	394	— 15	3.67
Smallest number of persons employed	1,801	1,967	+ 166	9.22
Greatest number of persons employed	2,321	2,547	+ 226	9.74
Average number of persons employed	2,083	2,197	+ 114	5.47
Average days in operation	296	293	— 3	1.01

TABLE II—INVESTMENT.

Classification.	Capital invest'ed in		Increase, +, or decrease —, in 1905	
	1904.	1905.	Amount.	Per cent
Land	\$528,871 54	\$548,961 90	+ \$20,090 45	3.80
Buildings and fixtures	724,626 92	725,172 54	+ 545 62	0.08
Machinery, etc.,	901,086 00	957,084 45	+ 55,998 45	6.21
Cash and other capital	2,213,420 30	2,224,057 31	+ 10,637 01	0.48
Total	\$4,368,004 76	\$4,455,276 29	+ \$87,271 53	2.00

TABLE III A—VALUE OF MATERIALS AND LABOR EMPLOYED, AND OF PRODUCT.

Classification.	Value of material used, wages and salaries paid in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Raw material used	\$2,899,752 22	\$2,618,841 73	— \$280,910 49	9.69
Other material used	475,198 82	408,763 48	— 66,435 34	13.98
Wages	977,421 50	1,020,071 06	+ 42,649 56	4.36
Salaries	209,162 50	234,429 47	+ 25,266 97	12.08
Profit and minor expenses ...	772,487 33	624,250 81	— 148,236 52	19.19
Goods made and work done ..	5,334,022 37	4,906,356 55	— \$427,665 82	8.02

TABLE III B—ANALYSIS OF TABLE III A.

Classification.	1904.	1905.
Goods made or work done (gross product)	\$5,334,022 37	\$4,906,356 55
Value of stock used and material consumed in production	3,374,951 04	3,027,605 21
Industry product (gross production less value of stock and material)	1,959,071 33	1,878,751 34
Wages and salaries (Labor's direct share of product)	1,186,584 00	1,254,500 53
Profit and minor expense fund (industry product less wages)	772,487 33	624,250 81
Percentage of industry product paid in wages	Per cent. 65.69	Per cent. 66.77
Percentage of industry product devoted to profit and minor expenses	34.31	33.23

TABLE IV—AVERAGE CAPITAL, ETC., PER EMPLOYEE.

Classification.	Average capital, product, and yearly earnings in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent.
Average capital per employee	\$2,096 98	\$2,027 89	— \$69 09	3.29
Average product per employee	2,560 74	2,223 21	— 337 53	13.18
Average yearly earnings	469 23	464 30	— 4 93	1.05

TABLE V—RANGE OF EMPLOYMENT AND OF UNEMPLOYMENT.

Months.	Total no. of persons employed in		Percentages of			
			Employment in		Unemployment in	
	1904.	1905.	1904.	1905.	1904.	1905.
January	2,051	2,020	88.37	79.31	11.63	20.69
February	2,069	2,046	89.14	80.33	10.86	19.67
March	2,040	2,147	87.89	84.29	12.11	15.71
April	2,118	2,166	91.25	85.04	8.75	14.96
May	2,071	2,173	89.23	85.32	10.77	14.68
June	2,039	2,164	87.85	84.96	12.15	15.04
July	1,801	1,967	77.59	77.23	22.41	22.77
August	1,859	2,021	80.09	79.35	19.91	20.65
September	2,168	2,342	93.41	91.95	6.59	8.05
October	2,199	2,387	94.74	93.72	5.26	6.23
November	2,321	2,547	100.—	100.—	.....	.....
December	2,257	2,385	97.24	93.64	2.76	6.36
Average	2,033	2,197	89.75	86.26	10.25	13.74

TABLE VI—OCCUPATIONS AND WAGES OF EMPLOYEES.

Occupations.	Total no. of persons.		Average hours per day.		Average wages per day.		Average wages per hour.		Increase, +, or decrease, —, per day in 1905.	
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	Amt.	Per ct.
Apprentices	11	16	9.20	9.84	\$.801	\$.853	\$.087	\$.087	+ .052	6.04
Apprentices, female		20		9.13		.856		.094		
Assemblers		2		9.50		2.615		.275		
Beamsters	4	4	10	10	1.41	1.50	.141	.15	+ .09	6.38
Bevelers	22	21	9	9	2.058	2.06	.229	.229	+ .002	.01
Blacksmiths	22	11	10	10	2.518	2.536	.252	.254	+ .018	.71
Bleachers	2	2	10	10	1.45	1.45	.145	.145		
Blockers	14	14	10	10	2.875	2.875	.283	.288		
Boiler makers	2	4	10	10	2.25	2.625	.225	.263	+ .375	16.67
Book binders	11	10	9	9	1.936	2.073	.221	.230	+ .087	4.38
Bottlers	1	26	10	10	.50	.637	.05	.034	+ .137	27.40
Bottlers, female	17		10		.657		.066			
Bottom makers		2		10		2.00		.20		
Box makers	8	11	10	10	1.688	1.773	.169	.177	+ .085	5.04
Boys	25	56	9.96	9.98	.936	.966	.094	.097	+ .030	3.21
Brush makers	8	8	10	10	1.456	1.456	.146	.146		
Bulldozers		1		10		3.00		.30		
Burr pickers		1		10		1.75		.175		
Button makers		9		10		1.25		.125		
Captains	10	11	10.60	11.64	2.964	3.747	.28	.322	+ .783	26.42
Cards	1	1	10	10	2.50	2.50	.25	.25		
Cards, female	36		10		.67		.067			
Carpenters	69	74	10	10	1.825	1.989	.183	.199	+ .164	8.10
Carvers	1	1	10	10	3.00	3.00	.30	.30		
Chargers	8	1	10	10	1.60	1.70	.16	.17	+ .10	6.25
Chemists	2	1	10	10	7.50	6.00	.075	.60	- 1.50	22.00
Clerks		1		10		1.75		.175		
Compounders		1		10		2.90		.29		
Conveyors	1	2	10	10	1.60	1.60	.16	.16		
Cooks	5	3	11.20	12	1.098	1.33	.098	.111	+ .232	21.13
Coopers	6	12	10	10	1.788	1.819	.179	.182	+ .031	1.12
Core makers	1	1	10	10	2.50	2.50	.25	.25		
Cupola tenders	1	1	10	10	3.00	2.33	.30	.233	- .67	22.33
Cutters	55	50	9.96	9.76	1.809	1.912	.182	.196	+ .103	5.69
Designers		2		9		3.83		.426		
Distillers	2	2	10	10	1.96	1.96	.196	.196		
Dock men	6	8	10	10	2.00	2.50	.20	.25	+ .50	25.00
Dressers		35		10		3.00		.30		
Dryers	2	2	10	10	1.625	1.60	.163	.16	- .025	1.54
Dry-house men	4		10		1.50		.15			
Dyers	3	3	10	10	1.917	1.917	.192	.192		
Electricians	1		10		1.75		.175			
Elevator men	4	1	10	10	1.375	1.00	.138	.10	- .375	27.27
Engineers	31	22	10.29	10.84	2.373	2.639	.231	.246	+ .296	12.47
Extractors	1		10		1.60		.16			
Feeders, female	3	3	9	9	.60	.58	.06	.064	- .02	3.33
Feltmen	1	1	10	10	1.10	1.10	.11	.11		
Finishers	2	9	9	9.50	3.33	2.242	.37	.236	- 1.088	32.67
Finishers, female	15	20	9	9.25	.50	.556	.056	.06	+ .056	11.20
Firemen	29	30	10.74	10.77	1.829	1.926	.17	.179	+ .097	5.30
Fishermen	53	108	10.28	10	2.172	2.316	.211	.232	+ .144	6.63
Fish dressers	20		9.83		2.50		.253			
Fitters	1	2	10	10	3.00	2.375	.30	.238	- .625	20.83
Folders, female	5	6	10	9.07	.521	.568	.052	.063	+ .077	14.78
Foremen	7	10	9.25	9.30	2.721	2.625	.283	.268	- .096	3.53
Forewomen	4		10		.71		.071			
Forgers	1	1	10	10	3.00	3.25	.30	.325	+ .25	8.33
Freezer men	20	25	10	10	2.00	2.50	.20	.25	+ .50	25.00
Gear ironers		11		10		2.055		.206		
Glass blowers	100	100	8.50	8.50	6.432	6.639	.756	.781	+ .217	33.80
Glaziers	9	7	9	9	2.222	1.93	.247	.213	- .292	13.14
Grinders	8	8	10	10	2.156	2.339	.216	.234	+ .183	8.49
Hammer men		2		10		2.875		.283		

TABLE VI—OCCUPATIONS AND WAGES OF EMPLOYEES—Continued.

Occupations.	Total no. of persons.		Average hours per day.		Average wages per day.		Average wages per hour.		Increase, +, or decrease, —, per day in 1905.			
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	Amt.	P. r ct.		
Helpers	289	247	9.30	9.17	1.181	1.119	.127	.122	—	.062	5.25	
Helpers, female	30	36	10	10	.761	.89	.076	.089	+	.129	16.95	
Hub banders	1	10	.....	.....	2.50	.....	.25	.....	.....	.....	.....
Inspectors	2	5	10	10	2.375	2.05	.233	.205	—	.325	13.69	
Inspectors, female	5	4	9.75	9.17	1.132	1.20	.116	.131	+	.068	6.01	
Instructors .....	.....	2	.....	.....	9.25	.....	1.275	.....	.....	.138	.....
Instructors, female .....	.....	2	.....	.....	9.25	.....	.83	.....	.....	.09	.....
Ironers, female	1	1	10	10	1.75	1.75	.175	.175	.....	.....	.....
Janitors	1	1	10	10	1.00	1.00	.10	.10	.....	.....	.....
Janitors, female	22	22	9	9	.83	.75	.092	.083	—	.08	9.64	
Knitters, female	361	326	10.09	10.15	1.762	1.773	.175	.172	+	.011	6.24	
Laborers .....	.....	78	.....	.....	.....	.....	.689	.....	.....	.....	.....
Laborers, female	2	2.60	3.75	.26	.375	+ 1.15	44.23
Limb builders .....	.....	9	.....	.....	9.50	.....	.....	.886	.....	.093	.....
Lining makers, female	1	10	.....	.....	1.50	.....	.15	.....	.....	.....	.....
Linemen	120	152	9.85	10	1.657	1.457	.165	.146	—	.20	12.07	
Machine hands .....	.....	138	9.94	9.25	1.534	1.256	.154	.136	—	.278	18.12
Machine hands, fe- male	97	41	9.88	9.76	2.363	2.422	.239	.248	+	.059	2.50	
Machinists	24	1	10	10	1.73	2.10	.173	.21	+	.37	21.39	
Mashers	1	2	.....	.....	2.00	.....	.20	.....	.....	.....	.....
Maters .....	.....	2	.....	.....	1.863	3.00	.186	.30	+	1.137	61.03
Millers	3	2	10	10	1.70	.....	.170	.....	.....	.....	.....
Mill men	1	10	.....	.....	2.139	2.375	.214	.238	+	.236	11.03
Molders	9	14	10	10	1.50	1.50	.125	.125	.....	.....	.....
Molders, female	4	4	12	12	1.50	1.50	.125	.125	.....	.....	.....
Net men	4	1	.....	.....	2.00	.....	.20	.....	.....	.....	.....
Oilers .....	.....	15	.....	.....	1.50	.....	.15	.....	.....	.....	.....
Oilers, builders	6	5	10	10	1.833	2.00	.183	.20	+	.167	9.11	
Packers	22	17	10.09	10.12	1.70	1.525	.168	.151	—	.175	10.29	
Packers, female	1	2	.....	.....	.90	.95	.09	.106	+	.05	5.55
Pagers	1	2	.....	.....	1.655	1.422	.166	.143	—	.233	14.08
Painters	33	25	9.97	9.97	1.655	1.422	.166	.143	—	.233	14.08	
Pattern makers	10	10	10	10	2.90	2.945	.29	.295	+	.045	1.55	
Perforators, female	1	10	.....	.....	.90	.....	.09	.....	.....	.....	.....
Picklers	1	10	.....	.....	2.00	.....	.20	.....	.....	.....	.....
Pilers .....	.....	15	.....	.....	1.50	.....	.15	.....	.....	.....	.....
Planers	2	2	10	10	2.00	2.00	.20	.200	.....	.....	.....
Platers	4	1	9.50	9	2.00	2.50	.211	.278	+	.50	25.00	
Pole makers	1	10	.....	.....	3.00	.....	.30	.....	.....	.....	.....
Polishers	18	16	9.28	9.31	1.753	1.815	.189	.195	+	.06	3.54	
Pressers	7	13	10	9.47	1.16	1.676	.161	.17	+	.066	4.10	
Pressmen	23	13	9.57	10	1.635	2.038	.171	.204	+	.40	24.65	
Raspers	2	10	.....	.....	1.75	.....	.175	.....	.....	.....	.....
Reed workers	25	26	10	10	1.24	1.187	.124	.119	—	.053	4.27	
Reed workers, female .....	.....	11	.....	.....	.....	.805	.....	.081	.....	.....	.....
Repairers	2	2	.....	.....	1.75	.....	.175	.....	.....	.....	.....
Rimmers	4	3	10	10	2.875	3.00	.288	.30	+	.125	4.35	
Riveters .....	.....	1	.....	.....	3.00	.....	.30	.....	.....	.....	.....
Roasters	1	10	.....	.....	3.00	.....	.30	.....	.....	.....	.....
Rubbers	1	1	10	10	2.50	2.50	.25	.25	.....	.....	.....
Rulers	4	4	9	9	1.885	2.003	.209	.223	+	.118	6.26	
Rulers, female	11	11	10	10	.727	.727	.073	.073	.....	.....	.....
Sailors .....	.....	5	.....	.....	1.50	.....	.15	.....	.....	.....	.....
Salts	8	10	10	10	2.00	2.25	.20	.225	+	.25	25.00	
Sanders	6	5	10	10	1.635	1.35	.163	.135	—	.275	16.92	
Sawyers	2	2	10	10	2.125	2.125	.213	.213	.....	.....	.....
Seat makers	1	1	10	10	2.50	2.75	.25	.275	+	.25	10.00	
Selectors .....	.....	1	.....	.....	1.75	.....	.175	.....	.....	.194	.....
Setters	12	12	10	10	1.50	1.50	.15	.15	.....	.....	.....
Sewers, female	173	154	9.41	9.21	.801	.933	.085	.101	+	.132	16.48	
Shapers	4	5	10	10	2.153	2.176	.216	.218	+	.018	.83	
Shearers	1	10	.....	.....	2.50	.....	.25	.....	.....	.....	.....
Shipping clerks	8	10	9.88	10	1.953	1.90	.198	.19	—	.053	2.96	
Silverers	3	2	9	9	2.167	2.167	.241	.241	.....	.....	.....
Sizers	12	12	10	10	1.75	1.75	.175	.175	.....	.....	.....

TABLE VII—CLASSIFICATION OF DAILY WAGES.

Classified daily wages. (inclusive).	Total number of persons employed.						Average wages per day.					
	Male.		Female.		Total.		Male.		Female.		Total.	
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.
\$.33 and less	6	1	25	7	31	38	\$.325	\$.33	\$.269	\$.25	\$.28	\$.26
.34 to .41.	1	.....	5	9	6	9	.36	.....	.384	.338	.38	.383
.42 to .49.	3	2	11	19	14	21	.46	.42	.442	.446	.446	.444
.50 to .58.	20	28	69	132	89	160	.513	.514	.525	.517	.522	.516
.59 to .66.	3	12	26	35	29	47	.617	.612	.631	.629	.63	.624
.67 to .74.	12	14	103	44	115	58	.688	.685	.676	.688	.677	.683
.75 to .83.	103	78	91	123	194	201	.76	.764	.784	.768	.771	.766
.84 to .91.	2	5	14	28	16	32	84	.836	.885	.835	.879	.838
.92 to .99.	8	7	7	8	15	15	.936	.934	.951	.95	.943	.943
1.00 to 1.08.	100	142	87	86	187	223	1.001	1.00	1.009	1.006	1.005	1.002
1.09 to 1.16.	7	17	10	14	17	31	1.124	1.122	1.12	1.118	1.122	1.12
1.17 to 1.24.	10	12	9	7	19	19	1.132	1.202	1.151	1.196	1.182	1.199
1.25 to 1.33.	104	77	19	26	123	103	1.264	1.262	1.25	1.254	1.262	1.26
1.34 to 1.41.	46	92	6	9	52	101	1.384	1.367	1.38	1.383	1.383	1.363
1.42 to 1.49.	5	4	.....	1	5	5	1.448	1.458	.....	1.45	1.448	1.456
1.50 to 1.58.	351	314	39	49	390	363	1.501	1.501	1.50	1.50	1.501	1.501
1.59 to 1.66.	33	46	2	1	35	47	1.607	1.605	1.65	1.60	1.61	1.605
1.67 to 1.74.	52	55	.....	2	52	57	1.685	1.692	.....	1.70	1.685	1.632
1.75 to 1.83.	204	129	25	25	229	154	1.758	1.765	1.75	1.75	1.757	1.762
1.84 to 1.91.	35	13	4	1	39	14	1.847	1.859	1.84	1.90	1.846	1.862
1.92 to 1.99.	14	21	.....	.....	14	21	1.944	1.943	.....	.....	1.944	1.943
2.00 to 2.08.	197	199	17	18	214	217	2.001	2.001	2.00	2.00	2.001	2.001
2.09 to 2.16.	11	78	.....	.....	11	78	2.126	2.13	.....	.....	2.126	2.13
2.17 to 2.24.	9	20	.....	1	9	21	2.18	2.191	.....	2.20	2.18	2.191
2.25 to 2.33.	72	75	12	12	84	87	2.273	2.267	2.25	2.25	2.268	2.263
2.34 to 2.41.	1	4	.....	.....	1	4	2.38	2.38	.....	.....	2.38	2.38
2.42 to 2.49.	3	2	.....	.....	3	2	2.427	2.425	.....	.....	2.427	2.425
2.50 to 2.58.	179	141	8	9	187	150	2.50	2.50	2.50	2.50	2.50	2.50
2.59 to 2.66.	1	1	.....	.....	1	1	2.65	2.65	.....	.....	2.65	2.65
2.67 to 2.74.	8	10	.....	.....	8	10	2.681	2.685	.....	.....	2.681	2.685
2.75 to 2.83.	35	28	1	1	36	29	2.768	2.761	2.75	2.75	2.768	2.761
2.84 to 2.91.	2	4	.....	.....	2	4	2.875	2.883	.....	.....	2.875	2.883
3.00 to 3.08.	20	100	5	5	25	105	3.00	3.00	3.00	3.00	3.00	3.00
3.09 to 3.16.	27	1	.....	.....	27	1	3.10	3.15	.....	.....	3.10	3.15
3.17 to 3.24.	3	2	.....	.....	3	2	3.193	3.185	.....	.....	3.193	3.185
3.25 to 3.33.	12	9	2	2	14	11	3.296	3.279	3.25	3.25	3.289	3.273
3.34 to 3.41.	.....	1	.....	.....	.....	1	.....	3.36	.....	.....	.....	3.36
3.42 to 3.49.	.....	2	.....	.....	.....	2	.....	3.46	.....	.....	.....	3.43
3.50 to 3.58.	1	33	.....	.....	1	33	3.50	3.50	.....	.....	3.50	3.50
3.59 to 3.66.	3	6	.....	.....	3	6	3.65	3.655	.....	.....	3.65	3.655
3.67 to 3.74.	.....	7	.....	.....	.....	7	.....	3.679	.....	.....	.....	3.679
4.00 to 4.08.	3	11	.....	.....	3	11	4.00	4.00	.....	.....	4.00	4.00
4.25 to 4.33.	1	1	.....	.....	1	1	4.25	4.25	.....	.....	4.25	4.25
4.50 to 4.58.	2	2	.....	.....	2	2	4.50	4.50	.....	.....	4.50	4.50
6.00 to 6.08.	.....	1	.....	.....	.....	1	.....	6.00	.....	.....	.....	6.00
7.50 to 7.58.	2	.....	.....	.....	2	.....	7.50	.....	.....	.....	7.50	.....
7.59 to 7.63.	73	.....	.....	.....	73	.....	7.65	.....	.....	.....	7.65	.....
7.75 to 7.83	.....	73	.....	.....	.....	73	.....	7.80	.....	.....	.....	7.80
Total and av.	1,784	1,880	597	674	2,381	2,554	\$1.986	\$2.046	\$.932	\$.969	\$1.734	\$1.762

Remarks.—The foregoing tables are based upon returns relating to industries in each of which less than five firms are engaged; also upon reports from establishments engaged in some of the industries already tabulated, which were received too late to be included in the proper tables. The comparisons presented

do not of course possess the same value as when a single industry is referred to. Some anomalies are apparent, also. Thus, although there was an average increase of 2 per cent. in all items of investment, of 5 per cent. in the number of persons employed, and of 7 per cent. in the total wages and salaries paid, there was a decrease of 11 per cent. in the value of the materials used, of 8 per cent. in the output, and of 1 per cent. in the average yearly earnings of employees. Of somewhat greater interest however, is Table VI, in which it is seen that about one-quarter of the total number of employees were females, and that a majority of these worked in specialized occupations.—In general it may be said that this set of tables is unsatisfactory, since it is impossible to ascertain from them any facts relating to the progress of any single industry from year to year. They have been retained, however, on account of whatever value the individual facts presented may have, and also in order that the total number of male and female employees in all industries, and the average wages of each, may later be presented.

52. SUMMARY OF 51 INDUSTRIES—1,098 ESTABLISHMENTS.

TABLE I—MANAGEMENT AND OPERATION.

Classification.	Number in		Increase, +, or decrease, —, in 1905.	
	1904	1905.	Amount.	Per cent
Number of private firms.....	445	423	— 22	4.94
Number of male partners.....	692	635	— 56	8.09
Number of female partners.....	40	46	+ 6	15.00
Total number of partners.....	732	681	— 50	6.83
Number of corporations.....	653	675	+ 22	3.37
Number of male stockholders.....	14,651	11,460	— 201	1.37
Number of female stockholders.....	3,192	1,833	— 1,359	41.01
Total number of stockholders.....	17,853	13,343	— 4,510	25.26
Total number of partners and stockholders.....	18,585	14,025	— 4,560	24.54
Smallest number of persons employed.....	68,860	73,197	+ 4,337	6.30
Greatest number of persons employed.....	75,323	81,721	+ 6,398	8.49
Average number of persons employed.....	72,956	78,110	+ 5,154	7.03
Average days in operation.....	302	304	+ 2	0.66

TABLE II—INVESTMENT.

Classification.	Capital invested in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Land	\$26,473,994 38	\$27,316,077 50	+ \$842,083 21	3.18
Buildings and fixtures	28,716,163 52	30,198,016 92	+ 1,481,853 40	5.16
Machinery, etc.	31,895,945 36	33,144,553 30	+ 1,248,607 94	3.91
Cash and other capital.....	92,027,792 71	95,528,368 70	+ 3,500,570 99	3.80
Total	\$179,113,895 97	\$186,187,011 51	+\$7,073,115 54	3.95

TABLE III A—VALUE OF MATERIALS AND LABOR EMPLOYED, AND OF PRODUCT.

Classification.	Value of material used, wages and salaries paid in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Raw material used	\$109,129,879 38	\$122,679,738 07	+\$13,549,858 69	12.42
Other material used	13,585,479 61	14,863,866 92	+ 1,278,387 31	9.41
Wages	33,947,957 55	36,630,327 30	+ 2,732,369 75	8.05
Salaries	8,045,804 71	8,554,589 68	+ 508,784 97	6.32
Profit and minor expenses....	42,354,996 49	44,945,127 98	+ 2,590,131 49	6.12
Goods made and work done..	\$207,064,117 74	\$227,723,649 95	+\$20,659,532 21	9.98

TABLE III B—ANALYSIS OF TABLE III A.

Classification.	1904.	1905.
Goods made and work done (gross product).....	\$207,064,117 74	\$227,723,649 95
Value of stock used and material consumed in pro- duction	122,715,358 99	137,543,604 99
Industry product (gross production less value of stock and material)	84,348,758 75	90,180,044 96
Wages and salaries (Labor's direct share of product)	41,998,762 26	45,234,916 93
Profit and minor expense fund (industry product less wages)	42,354,996 49	44,945,127 98
Percentage of industry product paid in wages.....	Per cent. 49.79	Per cent. 50.16
Percentage of industry product devoted to profit and minor expenses	50.21	49.84

TABLE IV—AVERAGE CAPITAL, ETC., PER EMPLOYEE.

Classification.	Average capital, product and yearly earnings in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent.
Average capital per employee	\$2,455 09	\$2,383 63	— \$71.46	2.91
Average product per employee	2,838 21	2,915 21	+ 77.00	2.71
Average yearly earnings	465 32	469 60	+ 4.28	0.92

TABLE V—RANGE OF EMPLOYMENT AND OF UNEMPLOYMENT.

Months.	Total no. of persons employed in		Percentages of			
			Employment in		Unemployment in	
	1904.	1905.	1904.	1905.	1904.	1905.
January	68,800	73,197	91.42	89.57	8.58	10.43
February	70,214	73,625	93.22	90.09	6.78	9.91
March	71,510	75,983	94.94	92.98	5.06	7.02
April	71,925	76,665	95.40	93.81	4.51	6.19
May	74,202	77,862	98.51	95.28	1.49	4.72
June	74,861	78,321	99.39	95.84	0.61	4.16
July	74,526	78,891	98.94	96.54	1.06	3.46
August	75,323	79,982	100.—	97.87	.....	2.13
September	74,523	80,525	98.94	98.54	1.06	1.46
October	73,906	80,957	98.12	99.07	1.88	0.93
November	73,631	81,731	97.79	100.—	2.21	.....
December	71,958	79,588	95.53	97.39	4.47	2.61
Average	72,956	78,110	96.86	95.58	3.14	4.42

TABLE VI—OCCUPATIONS AND WAGES OF EMPLOYEES.

Note.—From 432 different occupations found in the 51 larger industries, the 46 occupations have been chosen for separate presentation which occur in the greatest number of industries.

Number.	OCCUPATIONS.	Number of persons.						Average hours per DAY.						Average wages per day.						Average wages per hour.					
		Male.		Female.		Total.		Male.		Female.		Total.		Male.		Female.		Total.		Male.		Fema'e.		Total.	
		1904.	1905	1904.	1905.	1904	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1904.	1904.	1905.
1	Apprentices	930	679	25	37	955	716	9.84	9.82	9.42	8.53	9.83	9.75	1.084	.966	.600	.457	1.071	.939	.110	.088	.064	.054	.109	.098
2	Assemblers	133	127	4	9	137	136	9.96	9.99	10.00	9.44	9.96	9.96	1.819	1.674	.963	.967	1.791	1.627	.182	.168	.096	.102	.179	.163
3	Bench hands	244	402	43	.....	387	402	10.00	10.00	10.00	10.00	.....	10.00	1.481	1.527	.620	.....	1.385	1.527	.148	.153	.062	.....	.139	.153
4	Blacksmiths	560	577	.....	.....	560	577	10.01	9.98	.....	.....	10.01	9.94	2.549	2.448	.....	.....	2.549	2.448	.255	.245	.....	.....	.235	.245
5	Boilermakers	290	233	.....	.....	230	233	9.74	9.94	.....	.....	9.74	9.94	2.546	2.559	.....	.....	2.546	2.559	.261	.277	.....	.....	.261	.257
6	Bookkeepers	6	8	8	10	14	18	9.67	10.13	9.06	8.75	9.32	9.36	2.042	1.870	1.224	1.130	1.575	1.458	.211	.185	.13	.129	.169	.156
7	Boxmakers	185	203	284	307	469	510	9.77	9.54	10.00	9.99	9.91	9.92	1.594	1.531	.778	.815	1.100	1.100	.163	.160	.078	.082	.111	.111
8	Boys and girls	751	629	108	109	859	738	9.96	9.96	10.05	9.83	9.97	9.93	.883	.940	.925	.928	.888	.933	.089	.094	.093	.094	.089	.094
9	Cabinetmakers	508	643	.....	.....	508	643	9.86	10.00	.....	.....	9.85	10.00	2.058	1.916	.....	.....	2.058	1.916	.209	.192	.....	.....	.209	.192
10	Carpenters	1,667	1,510	5	3	1,672	1,513	9.78	9.78	10.00	10.00	9.78	9.78	2.101	2.180	1.190	1.430	2.098	2.178	.215	.223	.119	.143	.215	.223
11	Clerks	60	110	54	66	114	176	9.75	9.63	9.81	10.03	9.78	9.80	1.855	1.813	1.021	1.095	1.460	1.544	.190	.188	.104	.110	.149	.158
12	Coopers	435	440	.....	.....	435	440	9.33	9.60	.....	.....	9.33	9.60	2.240	2.274	.....	.....	2.240	2.274	.240	.237	.....	.....	.240	.237
13	Coremakers	320	403	25	55	345	458	9.97	10.00	10.00	9.94	9.97	9.99	1.946	1.995	.956	.868	1.874	1.850	.195	.200	.096	.087	.188	.186
14	Cupola tenders	23	34	.....	.....	23	34	10.00	10.00	.....	.....	10.00	10.00	2.060	2.126	.....	.....	2.060	2.126	.206	.213	.....	.....	.206	.213
15	Cutters	782	852	13	15	795	867	9.61	9.62	9.54	9.93	9.61	9.62	2.281	2.316	1.078	1.155	2.262	2.296	.257	.241	.113	.116	.257	.239
16	Draftsmen	89	97	.....	.....	89	97	9.08	8.94	.....	.....	9.08	8.94	3.029	2.623	.....	.....	3.029	2.623	.334	.294	.....	.....	.334	.294
17	Electricians	83	101	.....	.....	83	101	9.76	9.76	9.84	.....	9.76	9.84	2.215	2.314	.....	.....	2.215	2.314	.227	.235	.....	.....	.227	.235
18	Elevatormen	38	49	.....	.....	38	49	9.89	10.00	.....	.....	9.89	10.00	1.819	1.674	.....	.....	1.819	1.674	.184	.167	.....	.....	.184	.167
19	Engineers	568	596	.....	.....	568	596	10.29	9.92	.....	.....	10.29	9.92	2.400	2.449	.....	.....	2.400	2.449	.233	.247	.....	.....	.233	.247
20	Filers	127	136	.....	.....	127	136	10.02	10.02	10.06	.....	10.02	10.06	4.136	3.938	.....	.....	4.136	3.938	.414	.396	.....	.....	.414	.396
21	Finishers	936	888	322	435	1,258	1,323	9.98	9.99	9.85	9.90	9.95	9.96	1.689	1.802	.801	.771	1.462	1.455	.169	.180	.081	.078	.147	.146
22	Firemen	657	632	.....	.....	657	632	10.61	10.45	.....	.....	10.61	10.45	1.820	1.858	.....	.....	1.820	1.858	.172	.178	.....	.....	.172	.178
23	Foremen and fore- women	780	856	42	33	822	889	9.80	9.96	9.74	9.92	9.80	9.96	2.853	2.907	1.419	1.492	2.789	2.854	.291	.292	.146	.150	.284	.286
24	Helpers	7,752	8,033	1,833	2,237	9,585	10,290	9.94	9.88	9.86	9.94	9.93	9.90	1.310	1.359	.736	.640	1.200	1.203	.132	.138	.075	.065	.121	.122
25	Inspectors	43	32	23	42	66	74	10.12	10.03	9.99	9.89	10.12	9.95	2.185	2.060	1.090	1.014	1.803	1.441	.216	.199	.110	.103	.178	.145

26	Laborers.....	23,267	22,671	1,087	812	24,354	23,513	9,966	10.04	10.07	10.12	9.97	10.04	1.542	1.568	.695	5.708	1.504	1.537	.155	.156	.070	.071	.151	.153
27	Machinists.....	8,587	8,182	1,351	1,644	9,938	9,826	9.91	10.05	9.81	9.68	9.94	9.99	1.939	2.079	1.145	1.073	1.857	1.911	.159	.207	.117	.111	.188	.191
28	Masons.....	30	39	.....	.....	30	39	9.10	9.54	.....	.....	9.10	9.54	3.038	3.169	.....	.....	3.098	3.169	.340	.332	.....	.....	.340	.332
29	Millwrights.....	206	227	.....	.....	206	227	9.80	9.80	9.94	9.94	9.80	9.94	2.729	2.652	.....	.....	2.729	2.652	.278	.267	.....	.....	.278	.267
30	Molders.....	1,911	1,841	.....	.....	1,911	1,841	9.84	9.91	.....	.....	9.84	9.91	2.548	2.633	.....	.....	2.548	2.633	.259	.266	.....	.....	.259	.266
31	Packers.....	348	790	289	236	637	1,026	10.24	9.01	9.91	9.90	10.09	9.21	1.723	1.831	.611	.649	1.218	1.559	.168	.203	.062	.063	.122	.169
32	Painters.....	983	1,173	41	43	1,024	1,216	9.94	9.93	10.00	10.00	9.94	9.93	1.834	1.939	.803	.816	1.850	1.899	.190	.195	.041	.032	.186	.191
33	Patternmakers.....	281	278	.....	.....	281	278	9.82	9.82	9.97	9.97	9.82	9.97	2.819	2.935	.....	.....	2.819	.935	.287	.294	.....	.....	.287	.294
34	Piece workers.....	81	59	442	428	526	487	10.00	10.00	9.70	10.00	9.73	10.00	2.000	1.402	.931	.931	1.101	.988	.200	.140	.093	.093	.113	.099
35	Polishers.....	313	391	.....	.....	313	391	9.73	9.83	.....	.....	9.73	9.83	1.840	1.918	.....	.....	1.840	1.918	.189	.197	.....	.....	.189	.197
36	Sawyers.....	598	687	5	2	603	689	10.00	9.99	10.00	10.00	10.00	9.99	2.404	2.357	1.452	1.315	2.283	2.354	.240	.236	.145	.132	.228	.236
37	Sewers.....	28	36	1,426	1,278	1,434	1,314	9.64	9.76	9.35	9.45	9.35	9.46	1.890	1.688	.958	.934	9.6	.984	.196	.173	.102	.102	.104	.104
38	Sheet metal workers.....	185	277	.....	.....	185	277	9.28	.914	.....	.....	9.28	9.54	2.3	2.139	.....	.....	2.332	2.139	.253	.224	.....	.....	.253	.224
39	Shippers.....	424	379	46	46	470	425	9.87	.982	9.99	9.99	9.88	9.83	1.639	1.744	.526	.498	1.557	1.609	.177	.178	.053	.050	.158	.164
40	Sorters.....	163	143	440	385	603	523	9.99	10.05	9.67	9.70	9.76	9.79	1.747	1.181	.886	.881	1.119	1.135	.175	.117	.092	.091	.115	.116
41	Steamfitters.....	88	102	.....	.....	88	102	9.89	9.90	.....	.....	9.89	9.90	2.117	2.074	.....	.....	2.117	2.074	.214	.209	.....	.....	.214	.209
42	Stenographers.....	3	7	11	12	14	19	9.33	9.29	9.36	8.42	9.36	8.74	1.750	1.786	1.611	1.462	1.641	1.581	.188	.192	.172	.174	.175	.181
43	Teamsters.....	1,146	1,266	.....	.....	1,146	1,266	9.89	9.85	9.85	9.85	9.89	9.85	1.786	1.793	.....	.....	1.786	1.793	.181	.182	.....	.....	.181	.182
44	Watchmen.....	388	508	.....	.....	388	508	11.12	10.74	.....	.....	11.12	10.74	1.700	1.643	.....	.....	1.700	1.643	.153	.153	.....	.....	.153	.153
45	Woodworkers.....	414	425	.....	.....	414	425	9.99	9.99	.....	.....	9.99	9.99	1.656	1.751	.....	.....	1.656	1.751	.166	.175	.....	.....	.166	.175
46	Yardmen.....	195	476	.....	.....	195	476	10.01	10.21	.....	.....	10.01	10.21	1.497	1.642	.....	.....	1.497	1.642	.150	.161	.....	.....	.150	.161
	Total, 46 occupations.....	57,649	53,247	7,927	8,274	65,576	66,521	9.94	9.97	9.78	9.81	9.92	9.95	1.727	1.775	.870	.840	1.624	1.658	.174	.178	.089	.086	.164	.167
	386 other occupations.....	12,821	15,093	4,344	4,442	17,168	19,735	9.90	9.85	9.65	9.70	9.84	9.81	1.918	1.934	.913	.958	1.664	1.705	.194	.196	.095	.099	.179	.174
	Total, 432 occupations.....	70,473	73,340	12,271	12,916	82,744	86,256	9.93	9.91	9.73	9.77	9.90	.992	1.762	1.807	.885	.883	1.632	1.669	.177	.182	.091	.090	.165	.168

MANUFACTURING RETURNS, 1904-1905.

TABLE VII—CLASSIFICATION OF DAILY WAGES.

Classified daily wages, (inclusive).	Total number of persons employed.						Average wages per day.					
	Male.		Female.		Total.		Male.		Female.		Total.	
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.
\$0.33 or less .	15	18	64	96	79	113	\$0.311	\$0.296	\$0.293	\$0.241	\$0.296	\$0.249
.34 to 0.41 .	32	39	295	208	327	247	.387	.388	.372	.362	.374	.366
.42 to .49 .	38	34	259	249	297	283	.435	.429	.441	.440	.440	.439
.50 to .58 .	646	506	1,352	1,592	1,998	2,188	.515	.516	.523	.519	.521	.518
.59 to .66 .	397	363	988	1,018	1,335	1,386	.620	.624	.623	.627	.626	.626
.67 to .74 .	470	386	803	888	1,273	1,269	.688	.682	.683	.687	.685	.684
.75 to .83 .	1,840	1,828	2,854	2,981	4,724	4,809	.768	.768	.771	.771	.770	.770
.84 to .91 .	640	533	784	998	1,424	1,531	.878	.881	.875	.873	.876	.876
.92 to .99 .	152	154	359	244	541	398	.939	.935	.953	.934	.949	.934
1.00 to 1.08 .	2,297	2,202	1,790	2,154	4,087	4,356	1.008	1.006	1.004	1.004	1.005	1.005
1.09 to 1.16 .	1,290	969	585	353	1,875	1,327	1.120	1.121	1.114	1.117	1.118	1.120
1.17 to 1.25 .	946	569	236	200	1,182	769	1.213	1.192	1.187	1.188	1.208	1.191
1.25 to 1.33 .	4,712	4,714	861	744	5,573	5,458	1.265	1.264	1.272	1.272	1.266	1.267
1.34 to 1.41 .	2,852	2,565	136	233	2,988	2,798	1.369	1.373	1.363	1.369	1.369	1.373
1.42 to 1.49 .	1,090	603	26	27	1,116	630	1.447	1.446	1.44	1.437	1.447	1.446
1.50 to 1.58 .	13,351	13,832	405	418	13,756	14,300	1.503	1.503	1.507	1.504	1.503	1.503
1.59 to 1.66 .	5,139	5,801	49	55	5,188	5,856	1.628	1.625	1.623	1.637	1.628	1.628
1.67 to 1.74 .	2,836	2,231	44	51	2,880	2,282	1.694	1.696	1.673	1.682	1.693	1.695
1.75 to 1.83 .	8,187	10,213	100	168	8,237	10,381	1.758	1.765	1.764	1.753	1.759	1.764
1.84 to 1.91 .	2,167	1,762	17	7	2,184	1,769	1.869	1.867	1.864	1.881	1.869	1.837
1.92 to 1.99 .	474	441	.....	11	474	452	1.929	1.932	.....	1.943	1.929	1.939
2.00 to 2.08 .	6,464	6,738	119	118	6,583	6,856	2.003	2.002	2.001	2.00	2.002	2.002
2.09 to 2.16 .	509	764	10	12	519	776	2.125	2.121	2.128	2.105	2.125	2.131
2.17 to 2.24 .	592	745	4	1	596	746	2.190	2.195	2.197	2.20	2.190	2.195
2.25 to 2.33 .	2,956	3,360	25	45	2,981	3,405	2.259	2.264	2.265	2.252	2.250	2.264
2.34 to 2.41 .	562	478	1	2	563	480	2.334	2.331	2.40	2.375	2.384	2.381
2.42 to 2.49 .	242	271	3	1	245	272	2.453	2.449	2.46	2.42	2.453	2.449
2.50 to 2.58 .	3,736	3,570	24	22	3,760	3,592	2.505	2.501	2.50	2.502	2.505	2.501
2.59 to 2.66 .	373	488	3	.....	376	488	2.625	2.621	2.60	.....	2.625	2.621
2.67 to 2.74 .	276	348	4	.....	280	348	2.692	2.679	2.67	.....	2.692	2.679
2.75 to 2.83 .	1,332	1,837	2	6	1,334	1,843	2.764	2.761	2.75	2.75	2.764	2.761
2.84 to 2.91 .	349	408	.....	1	349	409	2.867	2.89	.....	2.85	2.867	2.89
2.92 to 2.99 .	10	242	.....	.....	10	242	2.945	2.957	.....	.....	2.945	2.957
3.00 to 3.08 .	1,534	1,803	7	11	1,541	1,814	3.002	3.001	3.00	3.00	3.002	3.001
3.09 to 3.16 .	125	120	.....	.....	125	120	3.125	3.122	.....	.....	3.125	3.122
3.17 to 3.24 .	53	78	.....	.....	53	78	3.194	3.205	.....	.....	3.194	3.205
3.25 to 3.33 .	428	523	2	3	430	526	3.282	3.275	3.25	3.25	3.282	3.275
3.34 to 3.41 .	115	66	.....	.....	115	66	3.383	3.384	.....	.....	3.383	3.384
3.42 to 3.49 .	19	22	.....	.....	19	22	3.453	3.453	.....	.....	3.453	3.453
3.50 to 3.58 .	341	485	.....	.....	341	485	3.50	3.50	.....	.....	3.50	3.50
3.59 to 3.66 .	69	60	.....	.....	69	60	3.619	3.636	.....	.....	3.619	3.636
3.67 to 3.74 .	15	32	.....	.....	15	32	3.684	3.698	.....	.....	3.684	3.698
3.75 to 3.83 .	64	133	.....	.....	64	133	3.764	3.757	.....	.....	3.764	3.757
3.84 to 3.91 .	35	42	.....	.....	35	42	3.858	3.861	.....	.....	3.858	3.861
3.92 to 3.99 .	.....	9	.....	.....	.....	9	.....	3.92	.....	.....	.....	3.92
4.00 to 4.08 .	258	319	.....	.....	258	319	4.001	4.001	.....	.....	4.001	4.001
4.09 to 4.16 .	3	8	.....	.....	3	8	4.14	4.119	.....	.....	4.14	4.119
4.17 to 4.24 .	35	29	.....	.....	35	29	4.195	4.177	.....	.....	4.195	4.177
4.25 to 4.33 .	39	25	.....	.....	39	25	4.27	4.256	.....	.....	4.27	4.256
4.34 to 4.41 .	9	4	.....	.....	9	4	4.37	4.40	.....	.....	4.37	4.40
4.42 to 4.49 .	1	1	.....	.....	1	1	4.45	4.45	.....	.....	4.45	4.45
4.50 to 4.58 .	35	69	.....	.....	35	69	4.50	4.50	.....	.....	4.50	4.50
4.59 to 4.66 .	14	4	.....	.....	14	4	4.608	4.623	.....	.....	4.608	4.623
4.67 to 4.74 .	4	3	.....	.....	4	3	4.72	4.67	.....	.....	4.72	4.67
4.75 to 4.83 .	9	21	.....	.....	9	21	4.773	4.76	.....	.....	.....	.....
4.84 to 4.91 .	.....	13	.....	.....	.....	13	.....	4.90	.....	.....	.....	4.90
4.92 to 4.99 .	.....	1	.....	.....	.....	1	.....	4.95	.....	.....	.....	4.95
5.00 to 5.08 .	110	104	.....	.....	110	104	5.00	5.00	.....	.....	5.00	5.00
5.09 to 5.16 .	.....	4	.....	.....	.....	4	.....	5.10	.....	.....	.....	5.10
5.17 to 5.24 .	13	1	.....	.....	13	1	5.237	5.18	.....	.....	5.237	5.18
5.25 to 5.33 .	4	10	.....	.....	4	10	5.263	5.25	.....	.....	5.263	5.25
5.34 to 5.41 .	.....	2	.....	.....	.....	2	.....	5.395	.....	.....	.....	5.395
5.50 to 5.58 .	8	10	.....	.....	8	10	5.50	5.508	.....	.....	5.50	5.508
5.59 to 5.66 .	.....	12	.....	.....	.....	12	.....	5.63	.....	.....	.....	5.63
5.75 to 5.83 .	2	.....	.....	.....	2	.....	5.76	.....	.....	.....	5.76	.....
5.84 to 5.91 .	1	1	.....	.....	1	1	5.84	5.85	.....	.....	5.84	5.85
5.92 to 5.99 .	1	.....	.....	.....	1	.....	5.92	.....	.....	.....	5.92	.....

TABLE VII—CLASSIFICATION OF DAILY WAGES—Continued.

Classified daily wages, (inclusive).	Total number of persons employed.						Average wages per day.					
	Male.		Female.		Total.		Male.		Female.		Total.	
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.
6.00 to 6.08..	32	39	.....	.....	32	39	6.00	6.00	.....	.....	6.00	6.00
6.50 to 6.58..	5	9	.....	.....	5	9	6.50	6.50	.....	.....	6.50	6.50
6.87 to 6.88..	2	.....	.....	.....	2	.....	6.63	.....	.....	.....	6.63	.....
6.87 to 6.74..	.....	1	.....	.....	.....	1	.....	6.67	.....	.....	.....	6.67
6.75 to 6.83..	1	.....	.....	.....	1	.....	6.77	.....	.....	.....	6.77	.....
7.00 to 7.08..	13	14	.....	.....	13	14	7.00	7.00	.....	.....	7.00	7.00
7.09 to 7.16..	.....	3	.....	.....	.....	3	.....	7.15	.....	.....	.....	7.15
7.17 to 7.24..	1	.....	.....	.....	1	.....	7.20	.....	.....	.....	7.20	.....
7.50 to 7.58..	11	8	.....	.....	11	8	7.50	7.50	.....	.....	7.50	7.50
7.59 to 7.66..	73	.....	.....	.....	73	.....	7.65	.....	.....	.....	7.65	7.65
7.75 to 7.83..	2	74	.....	.....	2	74	7.75	7.799	.....	.....	7.75	7.799
8.00 to 8.08..	7	2	.....	.....	7	2	8.011	8.00	.....	.....	7.75	7.799
8.25 to 8.33..	3	4	.....	.....	3	4	8.303	8.29	.....	.....	8.303	8.29
8.42 to 8.49..	.....	1	.....	.....	.....	1	.....	8.42	.....	.....	.....	8.42
8.50 to 8.58..	2	1	.....	.....	2	1	8.50	8.50	.....	.....	8.50	8.50
8.59 to 8.66..	.....	1	.....	.....	.....	1	.....	8.59	.....	.....	.....	8.59
8.67 to 8.74..	1	.....	.....	.....	1	.....	8.70	.....	.....	.....	8.70	.....
8.84 to 8.91..	.....	1	.....	.....	.....	1	.....	8.90	.....	.....	.....	8.90
9.00 to 9.08..	1	2	.....	.....	1	2	9.00	9.00	.....	.....	9.00	9.00
10.00 to 10.08..	1	.....	.....	.....	1	.....	10.00	10.00	.....	.....	10.00	10.00
11.00 to 11.08..	.....	1	.....	.....	.....	1	.....	11.03	.....	.....	.....	11.03
12.00 to 12.08..	.....	1	.....	.....	.....	1	.....	12.00	.....	.....	.....	12.00
12.75 to 12.83..	.....	1	.....	.....	.....	1	.....	12.82	.....	.....	.....	12.82
13.34 to 13.41..	.....	2	.....	.....	.....	2	.....	13.34	.....	.....	.....	13.34
14.00 to 14.08..	1	1	.....	.....	1	1	14.00	14.00	.....	.....	14.00	14.00
15.00 to 15.08..	1	1	.....	.....	1	1	15.00	15.00	.....	.....	15.00	15.00
16.67 to 16.74..	.....	1	.....	.....	.....	1	.....	16.67	.....	.....	.....	16.67
Total ...	70,473	73,340	12,271	12,916	82,744	86,256	\$1.762	\$1.807	\$.885	\$.833	\$1.632	\$1.660

Remarks.—The tables indicate that the 51 leading industries of Wisconsin experienced, as a whole, an unusual growth in the two years 1904 and 1905. This is most clearly seen in the increase in the value of the industry product in 1905. In the decade from 1890 to 1900 the total value of the manufactured products of the state increased by about 45 per cent., an average increase of 4.5 per cent. per year. But in 1905 the value of all products showed a gain of nearly 10 per cent., or more than twice as great as this average. The capital invested increased by 4 per cent. in 1905, all items of investment showing a gain. There was an increase of 7 per cent. in the average number of persons employed, of 11 per cent. in the value of the materials used, and of 8 per cent. in the total wages and salaries paid. The average number of days of operation in 1905 was 304, 2 more than in 1904. This is about the number of working days in a year. But inasmuch as a number of establishments em-

ployed both day and night shifts, the average number of days of operation would be considerably greater than this number if all establishments had run during every working day in the year. It is evident therefore that a large number of plants were idle for a portion of the time each year. This was due sometimes to the necessity of making repairs to buildings or machinery; sometimes to a temporary decrease in the demand for the product; while in the case of certain industries, owing to the nature of the work done, the period of activity regularly continued for only a portion of the year, the plants being idle during the remaining months. Employment was very regular from month to month, the average of unemployment being only 3 per cent. in 1904 and 4.5 per cent. in 1905. There was an almost uniform increase in the number of employees from the beginning of 1904 to the end of 1905. Although there was an increase of 1 per cent. in 1905 in the average yearly earnings of employees, Labor received only a moderate share of the value of the industry product, as in 1904—about 50 per cent. The average daily wages of all employees increased by about 2 per cent, however. For men only, the increase was about 2.5 per cent. The average daily wages of women were about $\frac{1}{4}$ of 1 per cent lower in 1905. The increase in the number of females employed was about 1 per cent greater than the increase in the number of males. In consequence the proportion of females employed was slightly greater in 1905—14.9 per cent. of the total number of employees, as against 14.8 per cent. in 1904. There was a slight increase in the average hours of labor both of men and of women, less however than 1 per cent.

RETURNS FOR 11 MINOR INDUSTRIES.

A. BEVERAGES—17 ESTABLISHMENTS.

TABLE A—MANAGEMENT AND OPERATION.

Classification.	Number in		Increase, +, or decrease, -, in 1905.	
	1904	1905	Amount.	Per cent.
Number of private firms	10	10		
Number of male partners	10	10		
Number of female partners	3	3		
Total number of partners	13	13		
Number of corporations	7	7		
Number of male stockholders	44	39	- 5	11.33
Number of female stockholders	7	6	- 1	14.29
Total number of stockholders	51	45	- 6	11.76
Total number of partners and stockholders	64	58	- 6	9.38
Smallest number of persons employed	161	229	+ 68	42.24
Greatest number of persons employed	253	291	+ 33	12.79
Average number of persons employed	230	245	+ 15	6.52
Average days in operation	303	303		
Average daily earnings	\$461.41	\$463.89	+ \$2.48	0.54

TABLE B—RANGE OF EMPLOYMENT AND OF UNEMPLOYMENT.

Months.	Total no. of persons employed in		Percentages of			
	1904.	1905.	Employment in		Unemployment in	
			1904.	1905.	1904.	1905.
January	258	291	100.—	100.00		
February	240	243	93.02	83.51		
March	236	235	87.60	80.76	6.98	16.49
April	234	233	90.70	19.79	12.40	19.24
May	241	231	93.41	79.33	9.30	18.21
June	248	240	96.10	82.47	6.59	20.62
July	231	250	89.53	85.91	3.90	17.53
August	235	251	91.09	83.25	10.47	14.09
September	229	251	83.76	83.25	8.91	13.75
October	219	246	84.86	84.55	11.24	13.75
November	219	242	84.86	84.55	15.14	15.45
December	161	229	62.40	83.16	15.14	16.84
Average	230	245	89.15	84.19	37.60	21.30
					10.85	15.81

TABLE C—OCCUPATIONS AND WAGES OF EMPLOYEES.

Occupations.	Total no. of persons.		Average hours per day.		Average wages per day.		Average wages per hour.		Increase, +, or decrease, —, per day in 1905	
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	Amt.	Per ct.
Barn men	1	1	10	10	\$1.50	\$1.50	\$.150	\$.150	.....	.....
Beer peddlers	9	9	10	10	2.50	2.50	.250	.250	.....	.....
Bottlers	37	33	9.91	9.94	1.874	1.717	.183	.173	— .157	.838
Boys	1	1	9.5	10	1.17	1.17	.123	.117	.....	.....
Brewers	3	3	10	10	2.32	2.977	.232	.298	+ .657	2.83
Carpenters .....	.....	7	.....	10	.....	1.929	.....	.193	.....	.....
Engineers	2	4	10	10	2.98	2.595	.298	.26	— .385	12.92
Firemen	2	2	10	10	1.815	2.335	.182	.234	+ .52	28.65
Firemen	4	3	10	10	3.033	2.487	.303	.249	— .546	18.07
Foremen	41	37	10	10	.838	.955	.084	.096	+ .117	14.01
Helpers	1	.....	10	.....	1.25	.....	.125	.....	.....	.....
Inspectors	1	5	10	10	1.50	1.25	.150	.125	— .25	10.67
Labelers	1	1	10	10	1.00	1.00	.100	.100	.....	.....
Labelers, female	137	97	9.99	9.95	1.508	1.421	.151	.143	— .085	5.64
Laborers	17	24	10	9.83	1.744	1.783	.174	.181	+ .039	2.24
Machine operators	6	.....	10	.....	2.333	.....	.233	.....	.....	.....
Machinists	4	25	10	9.92	1.50	1.638	.150	.170	+ .188	12.50
Packers	1	.....	10	.....	1.50	.....	.150	.....	.....	.....
Salesmen	1	2	10	10	2.00	1.90	.200	.190	— .10	5.00
Shipping clerks	1	1	7	7	1.85	1.25	.193	.179	— .10	7.04
Stenographers, female	22	24	10	9.96	1.92	1.913	.192	.191	— .007	.36
Teamsters	16	9	10	10	1.363	1.304	.136	.130	— .059	4.33
Washers	2	2	12	11	1.665	1.675	.139	.152	+ .01	6.01
Watchmen .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total and av.	310	290	9.93	9.95	\$1.579	\$1.609	\$.159	\$.162	+ \$.03	1.90

Remarks.—For each of the eleven minor industries only a few facts are presented. From the data offered, however, a fair idea of the general condition of each industry as carried on in this state may be gained.

The manufacture of beverages shows a satisfactory growth for the two years 1904 and 1905. There was an increase of 6.5 per cent. in the average number of employees, and of about $\frac{1}{2}$ of 1 per cent. in the average yearly earnings. The number of days of operation was 303 each year—practically the entire number of working days in a year. Employment was somewhat irregular in 1904, but in 1905 less so than appears from the table. The apparent irregularity in the latter year is due to the large maximum number employed in January. For the remaining months employment was quite uniform. One woman was employed each year as stenographer and one as labeler. The hours of the former were but 7 per day. The wages of both were about the average wages of female employees. The daily wages of men on the contrary were lower in this industry than the average.

B. CHEMICALS—10 ESTABLISHMENTS.

TABLE A—MANAGEMENT AND OPERATION.

Classification.	Number in		Increase, +, or decrease, —, in 1905.	
	1904	1905	Amount.	Per cent.
Number of private firms	2	2		
Number of male partners	17	17		
Number of female partners	2	2		
Total number of partners	19	19		
Number of corporations	8	8		
Number of male stockholders	415	415		
Number of female stockholders	8	8		
Total number of stockholders	423	423		
Total number of partners and stockholders	442	442		
Smallest number of persons employed	83	80	— 3	3.61
Greatest number of persons employed	105	99	— 6	5.71
Average number of persons employed	93	89	— 4	4.30
Average days in operation	309	311	+ 2	0.65
Average yearly earnings	\$420.34	\$449.05	+\$27.71	6.59

TABLE B—RANGE OF EMPLOYMENT AND OF UNEMPLOYMENT.

Months.	Total no. of persons employed in		Percentages of			
			Employment in		Unemployment in	
	1904.	1905.	1904.	1905.	1904.	1905.
January	84	80	80.00	80.81	20.—	19.19
February	83	83	79.05	83.84	20.95	16.16
March	85	84	80.95	84.85	19.05	15.15
April	96	87	91.43	87.88	8.57	12.12
May	94	88	89.52	88.89	10.48	11.11
June	98	90	93.33	90.91	6.67	9.09
July	100	94	95.24	94.95	4.76	5.05
August	105	99	100.—	100.—		
September	96	97	91.43	97.98	8.57	2.02
October	94	92	89.52	92.93	10.48	7.07
November	91	92	86.67	92.93	13.33	7.07
December	90	85	85.71	85.86	14.29	14.14
Average	93	89	88.57	89.90	11.43	10.10

TABLE C—OCCUPATIONS AND WAGES OF EMPLOYEES.

Occupations.	Total no. of persons.		Average hours per day		Average wages per day.		Average wages per hour.		Increase, +, or decrease, —, per day in 1905.	
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	Amt.	Per ct.
Bookkeepers	1	.....	8	.....	\$2.25	.....	\$.281	.....	.....	.....
Chemists	4	4	9.75	8.25	3.04	\$3.00	.312	\$.364	— \$.04	1.32
Coopers	1	1	10	10	2.40	2.50	.24	.25	+ .10	4.14
Engineers	6	5	9.17	9.4	2.487	2.50	.271	.266	+ .013	.52
Firemen	3	3	9.50	9.83	1.733	1.733	.182	.176	.....	.....
Foremen	2	2	10	10	3.21	2.325	.321	.232	— .885	27.57
Helpers	21	23	9.76	9.39	1.256	1.173	.129	.125	— .083	6.61
Helpers, female	18	17	8.81	9.56	.821	.804	.093	.084	— .017	2.07
Laborers	28	32	9.21	9.25	1.582	1.548	.172	.167	— .034	2.15
Millers	1	.....	8	.....	1.75	.....	.219	.....	.....	.....
Packers, female	3	2	8	8	1.00	1.00	.125	.125	.....	.....
Printers	1	1	8	8	1.20	1.20	.15	.15	.....	.....
Shipping clerks	1	1	10	8	2.00	2.00	.20	.25	.....	.....
Stenographers, female	2	2	8.25	8.75	1.46	1.50	.177	.171	+ .04	2.74
Warehousemen	2	2	9	9	2.125	2.375	.236	.264	+ .25	11.76
Watchmen	1	1	10	10	1.25	1.25	.125	.125	.....	.....
Total	95	96	9.23	9.29	\$1.528	\$1.471	\$.166	\$.158	— \$.077	3.73

Remarks.—In this industry there was a decrease of 4 per cent. in 1905 in the average number of persons employed, and probably therefore a decrease in the output. There was however an increase of 2 in the number of days of operation, the number being high each year—309 in 1904 and 311 in 1905. The average yearly earnings of employees increased by nearly 7 per cent. Employment was somewhat irregular, especially in 1904 when there was an average of 22 per cent. of unemployment. In 1905 the average was 15 per cent. About one-fourth of the employees were women. They were employed in subsidiary occupations. Their hours of labor were less than 9 per day in 1904, but over 9 per day in 1905. Men worked about $9\frac{1}{4}$ hours per day each year.

C. COAL AND WOOD—21 ESTABLISHMENTS.

TABLE A—MANAGEMENT AND OPERATION.

Classification.	Number in		Increase, +, or dec. eas., -, in 1905.	
	1904.	1905.	Amount.	Per cent.
Number of private firms	6	6		
Number of male partners	8	8		
Number of female partners				
Total number of partners	8	8		
Number of corporations	15	15		
Number of male stockholders	53	53		
Number of female stockholders	5	5		
Total number of stockholders	63	63		
Total number of partners and stockholders	71	71		
Smallest number persons employed	1,196	1,340	+ 144	12.04
Greatest number of persons employed	1,948	1,894	- 54	2.77
Average number of persons employed	1,510	1,614	+ 104	6.89
Average days in operation	313	313	- 5	1.57
Average yearly earnings	\$519 75	\$508 94	-\$10 81	2.08

TABLE B—RANGE OF EMPLOYMENT AND OF UNEMPLOYMENT.

Months.	Total no. of persons employed in		Percentages of			
			Employment in		Unemployment in	
	1904.	1905.	1904.	1905.	1904.	1905.
January	1,253	1,452	64.32	76.66	35.68	23.34
February	1,376	1,558	70.64	80.39	29.36	19.61
March	1,277	1,340	65.55	70.75	34.45	29.25
April	1,196	1,358	61.40	71.70	38.60	28.30
May	1,397	1,684	71.72	88.91	28.28	11.09
June	1,563	1,594	80.24	84.16	19.76	15.84
July	1,948	1,641	100.—	86.64	.....	13.36
August	1,737	1,717	89.17	90.65	10.83	9.35
September	1,677	1,662	86.09	87.75	13.91	12.25
October	1,614	1,691	82.85	89.28	17.15	10.72
November	1,523	1,894	78.18	100.—	21.82	.....
December	1,559	1,778	80.03	93.88	19.97	6.12
Average	1,510	1,614	77.52	85.22	22.48	14.78

TABLE C—OCCUPATIONS AND WAGES OF EMPLOYEES.

Occupations.	Total no of persons.		Average hours per day.		Average wages per day.		Average wages per hour.		Increase, +, or decrease, —, per day in 1905.	
	1904.	1905.	1904.	1905.	1904.	1905.	1904	1905	Amt.	Per ct.
Bag men	1	1	10	10	\$2.00	\$2.00	\$.20	\$.20	.....	.....
Blacksmiths	8	9	10	9.89	2.683	2.611	.269	.264	— \$.077	2.86
Carpenters	14	31	9.93	10	2.732	2.823	.275	.282	+ .091	3.33
Check boys	1	1	10	10	1.75	1.75	.175	.175	.....	.....
Coal heavers	149	100	10	10	5.128	5.353	.513	.535	+ .225	4.39
Coal scrapers .....	.....	2	.....	10	.....	1.665	.....	.167	.....	.....
Conveyors	6	7	10	10	2.083	2.071	.208	.207	— .012	.59
Dock laborers	82	127	10	10	2.253	2.20	.225	.222	— .033	1.46
Engineers	16	24	10	9.94	2.53	2.665	.253	.268	+ .135	5.33
Firemen	8	19	9.88	10	2.063	2.245	.209	.225	+ .182	8.82
Foremen	43	63	10	9.96	2.643	2.681	.264	.269	+ .038	1.44
Grip men	2	2	10	10	2.00	2.00	.20	.20	.....	.....
Harness makers	1	1	10	10	2.00	2.00	.20	.20	.....	.....
Hatch tenders	6	6	10	10	1.75	1.75	.175	.175	.....	.....
Helpers	21	4	10	10	1.726	2.188	.173	.219	+ .462	26.76
Hoisters	112	124	9.83	9.90	2.468	2.503	.251	.253	+ .035	1.42
Hostlers .....	.....	5	.....	10	.....	2.064	.....	.206	.....	.....
Laborers	731	.....	9.62	9.94	1.845	1.916	.192	.193	+ .071	3.85
Machine tenders	1	1	10	10	1.83	2.00	.183	.20	+ .17	9.29
Machinists	9	17	9.11	10	1.83	2.118	.201	.212	+ .288	13.60
Messengers	4	1	10	10	1.25	2.00	.125	.20	+ .75	60.00
Oilers	6	10	10	10	2.33	2.275	.233	.228	— .058	2.49
Painters	1	1	10	10	2.50	2.50	.25	.25	.....	.....
Pickers .....	.....	6	.....	11	.....	2.033	.....	.182	.....	.....
Riggers	5	2	10	10	2.65	2.50	.265	.25	— .15	5.66
Sawyers	4	3	10	10	2.063	2.00	.206	.20	— .063	3.05
Splicers	1	.....	10	.....	2.83	.....	.283	.....	.....	.....
Stevedores	24	24	10	9.58	6.00	6.00	.60	.626	.....	.....
Sweepers	1	.....	10	.....	1.25	.....	.125	.....	.....	.....
Teamsters	123	120	9.99	10	1.932	1.933	.193	.193	+ .001	.05
Timekeepers .....	.....	2	.....	10	.....	2.11	.....	.211	.....	.....
Watchmen	10	18	10.4	10.66	1.598	1.749	.154	.175	+ .151	9.45
Water boys	3	13	10	10.46	1.25	1.346	.125	.129	+ .096	7.68
Weighers	9	8	10	10	2.444	2.50	.244	.25	+ .056	2.29
Yardmen	350	240	10	10	1.743	1.758	.174	.176	+ .015	.86
Total	1,752	1,742	9.83	9.97	\$2.28	\$2.273	\$.232	\$.228	— \$.007	.31

Remarks.—This industry experienced a moderate growth in 1904 and 1905. There was an increase of 7 per cent. in the average number of employees in the latter year. Employment was much less irregular, the average unemployment being 15 per cent. as against 22 per cent. in 1904. The average yearly earnings of employees however decreased by about 2 per cent. The average number of days of operation was 318 in 1904 and 313 in 1905, both numbers being higher than the average for all industries. The average daily wages of employees were much higher in this industry than the average daily wages for men in all industries. No women were employed in either year.

D. CONTRACTORS AND BUILDERS—100 ESTABLISHMENTS.

TABLE A—MANAGEMENT AND OPERATION.

Classification.	Number in		Increase, +, or decrease, —, in 1905.	
	1904	1905	Amount.	Per cent.
Number of private firms	99	99		
Number of male partners	125	125		
Number of female partners	1	1		
Total number of partners	126	126		
Number of corporations	1	1		
Number of male stockholders	2	2		
Number of female stockholders	1	1		
Total number of stockholders	3	3		
Total number of partners and stockholders	129	129		
Smallest number of persons employed	211	228	+ 17	8.06
Greatest number of persons employed	983	827	— 156	15.87
Average number of persons employed	646	616	— 30	4.64
Average days in operation	237	237		
Average yearly earnings	\$584 17	\$583 98	— \$0.19	0.03

TABLE B—RANGE OF EMPLOYMENT AND OF UNEMPLOYMENT.

Months.	Total no. of persons employed in		Percentages of			
			Emp'oyment in		Unemployment in	
	1904.	1905.	1904.	1905.	1904.	1905.
January	225	261	22.89	31.56	77.11	68.44
February	211	228	21.47	27.57	78.53	72.44
March	310	391	31.54	47.28	68.46	52.72
April	535	579	54.43	70.01	45.57	29.99
May	770	755	78.33	91.29	21.67	8.71
June	799	827	81.28	100.—	18.72	.....
July	907	801	92.27	96.86	7.73	3.14
August	983	806	100.—	97.46	.....	2.54
September	970	773	98.69	94.07	1.32	5.93
October	888	753	90.34	91.05	9.66	8.95
November	729	659	74.16	79.69	25.84	20.31
December	422	552	42.93	66.75	57.07	33.25
Average	646	616	65.73	74.49	34.28	25.51

TABLE C—OCCUPATIONS AND WAGES OF EMPLOYEES.

Occupations.	Total no. of persons.		Average hours per day.		Average wages per day.		Average wages per hour.		Increase, +, or decrease, —, per day in 1905.	
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	Amt.	Per ct.
Apprentices	5	8	10	9.63	\$1.330	\$1.296	\$.138	\$.135	— \$.003	.02
Bookkeepers, female.	1	1	10	10	.800	.830	.080	.083	+ .003	.04
Boys	1	.....	8	.....	.500	.....	.063	.....	.....	.....
Brick layers	18	.....	9	.....	4.300	.....	.478	.....	.....	.....
Building movers	1	.....	10	.....	6.000	.....	.600	.....	.....	.....
Captains	1	1	10	10	3.500	3.500	.350	.350	.....	.....
Carpenters	614	581	9.59	9.61	2.800	2.358	.292	.245	— .047	1.69
Cooks, female	1	.....	12	.....	1.000	.....	.833	.....	.....	.....
Edgers .....	.....	1	.....	10	.....	1.750	.....	.175	.....	.....
Electricians .....	.....	1	.....	9	.....	5.000	.....	.556	.....	.....
Engineers	5	5	9.80	10	3.450	3.250	.352	.325	— .027	.08
Filers .....	.....	1	.....	10	.....	3.000	.....	.300	.....	.....
Firemen	5	4	10	10	1.900	2.125	.190	.213	+ .023	1.21
Foremen	6	13	10	9.31	3.292	4.000	.329	.430	+ .101	3.07
Helpers	65	136	9.81	9.62	1.639	1.768	.171	.184	+ .013	.08
Laborers	114	71	9.45	9.75	1.823	1.763	.193	.181	— .012	.07
Lathers	1	.....	9	.....	3.500	.....	.389	.....	.....	.....
Machine operators ..	1	.....	10	.....	1.750	.....	.175	.....	.....	.....
Masons	99	111	9.57	9.33	3.523	3.552	.369	.413	+ .044	1.25
Mechanics	7	.....	10	.....	2.179	.....	.218	.....	.....	.....
Painters	20	17	9.60	9.53	2.308	2.544	.240	.267	+ .027	1.17
Plasterers	12	6	9.55	9.33	3.584	3.667	.374	.393	+ .019	.05
Plumbers .....	.....	3	.....	9	.....	4.667	.....	.519	.....	.....
Sailors	5	.....	10	.....	1.750	.....	.175	.....	.....	.....
Sawyers .....	.....	1	.....	10	.....	3.000	.....	.300	.....	.....
Stone cutters	9	5	8	8	4.000	4.000	.500	.500	.....	.....
Teamsters	8	13	9.75	9.38	1.719	1.635	.176	.180	+ .044	.02
Tenders	36	27	9.83	9.41	1.776	1.841	.181	.196	+ .015	.09
Tinners .....	.....	1	.....	9	.....	2.750	.....	.306	.....	.....
Waitresses	2	.....	12	.....	.750	.....	.063	.306	.....	.....
Total	1,037	1,007	9.60	9.57	\$2.352	\$2.424	\$.245	\$.253	+ \$.008	.03

Remarks.—This industry suffered a decrease of 5 per cent. in 1905 in the number of persons employed. The number of days of operation remained the same, 237. The number was considerably less than the average for all industries owing to the nature of the work done. The season of the greatest activity was naturally during the summer months. The difference between the amount of work that could be done in winter and that done in summer produced a high average of unemployment—34 per cent. in 1904 and 26 per cent. in 1905. The average yearly earnings of employees were practically the same each year. The average daily wages of men were much higher than the average—\$2.36 in 1904 and \$2.43 in 1905. But four women were employed in 1904, and only one in 1905, all in accessory occupations. The hours of labor of those employed as cooks and waitresses were exceptionally long—12 per day.

E. ELEVATORS—18 ESTABLISHMENTS.

TABLE A—MANAGEMENT AND OPERATION.

Classification.	Number in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent.
Number of private firms	8	8		
Number of male partners	11	11		
Number of female partners				
Total number of partners	11	11		
Number of corporations	10	10		
Number of male stockholders	45	51	+ 6	13.33
Number of female stockholders	1	2	+ 1	100.—
Total number of stockholders	46	53	+ 7	15.22
Total number of partners and stockholders	57	64	+ 7	12.29
Smallest number of persons employed	112	135	+ 23	20.54
Greatest number of persons employed	282	268	— 14	4.96
Average number of persons employed	166	179	+ 13	7.83
Average days in operation	314	303	— 11	3.50
Average yearly earnings	\$635 06	\$637 52	—\$17 54	2.56

TABLE B—RANGE OF EMPLOYMENT AND OF UNEMPLOYMENT.

Months.	Total no. of persons employed in		Percentages of			
	1904.	1905.	Employment in		Unemployment in	
			1904.	1905.	1904.	1905.
January	150	176	53.19	65.67	46.81	34.33
February	135	160	47.87	59.70	52.13	40.30
March	154	148	47.52	55.22	52.48	44.78
April	128	141	45.39	52.61	54.61	47.39
May	119	135	42.20	50.37	57.80	49.63
June	126	155	44.68	57.84	55.32	42.16
July	112	144	39.72	53.73	60.28	46.27
August	129	141	45.74	52.61	54.26	47.39
September	215	226	76.24	84.33	23.76	15.67
October	232	268	100.—	100.—		
November	238	241	84.40	89.93	15.60	10.07
December	201	211	71.23	78.73	23.72	21.27
Average	166	179	58.87	66.79	41.13	33.21

TABLE C—OCCUPATIONS AND WAGES OF EMPLOYEES.

Occupations.	Total no. of persons.		Average hours per day.		Average wages, per day.		Average wages per hour.		Increase, +, or decrease, —, per day in 1905.		
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	Amt. Per ct.		
									Amt.	Per ct.	
Bookkeepers	1	3	11	10	\$2.00	\$2.383	\$.182	\$.200	+	\$.383	19.15
Buyers	1	1	10	10	2.50	2.50	.250	.250			
Cleaners	1	1	10	10	2.50	2.50	.250	.250			
Distributors	1	1	10	10	1.65	1.65	.165	.165			
Engineers	7	5	10	10	3.071	3.106	.307	.311	+	.035	1.14
Firemen	6	5	10	10	2.393	2.08	.229	.208	—	.213	9.29
Foremen	10	8	10	10	3.25	2.764	.325	.277	—	.486	1.50
Helpers	3	3	10	10	1.833	2.25	.183	.225	+	.417	22.75
House men	2	2	10	10	3.30	3.30	.330	.330			
Inspectors	2	3	10	10	2.975	2.96	.298	.296	—	.015	.50
Laborers	171	123	9.99	9.99	1.901	1.835	.190	.184	—	.066	3.47
Machinists	2	2	10	10	2.50	2.50	.250	.250			
Millers	1	1	10	11	1.75	2.00	.175	.182	+	.25	14.29
Millwrights	5	5	10	10	2.812	2.886	.281	.289	+	.074	2.63
Oilers	3	4	10	10	2.243	2.185	.224	.219	—	.053	2.50
Spouters	2	2	10	10	2.405	2.405	.241	.241			
Stenographers, female	1	1	9	8	1.50	1.75	.167	.219	+	.25	16.67
Teamsters	4	2	10	10.5	1.438	1.30	.144	.124	—	.108	7.51
Watchmen	7	7	10	10.86	2.014	1.977	.201	.182	—	.037	1.84
Weighers	7	5	10	10	2.723	2.786	.272	.279	+	.063	2.31
Total and av.	235	180	10	10.03	\$2.067	\$2.043	\$.207	\$.204	—	\$.024	1.161

Remarks.—There was an increase of 8 per cent. in 1905 in the the average number of persons employed in this industry. The average number of days of operation however decreased 4 per cent., and the average yearly earnings of employees nearly 3 per cent. The average unemployment was somewhat less in 1905—33 per cent. as against 41 per cent. in 1904. The greatest activity each year was during the months directly after the grain had been harvested. Female help was not employed in this industry, with the exception of one person working as stenographer. Her wages, as also those of the male employees, were considerably higher than the average. This industry is one which is destined to increase in importance as new areas within the state are opened to agriculture.

F. LAUNDRIES—44 ESTABLISHMENTS.

TABLE A—MANAGEMENT AND OPERATION.

Classification.	Number in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount	Per cent
Number of private firms	29	29		
Number of male partners	38	38		
Number of female partners	1	2	+ 1	100.—
Total number of partners	39	40	+ 1	2.56
Number of corporations	15	15		
Number of male stockholders	49	48	— 1	2.05
Number of female stockholders	5	6	+ 1	20.00
Total number of stockholders	54	54		
Total number of partners and stockholders	93	94	+ 1	1.08
Smallest number of persons employed	561	602	+ 41	7.31
Greatest number of persons employed	690	740	+ 50	7.25
Average number of persons employed	632	659	+ 27	4.27
Average days in operation	306	307	— 1	.33
Average yearly earnings	\$349 02	\$353 88	+ \$4 86	1.36

TABLE B—RANGE OF EMPLOYMENT AND OF UNEMPLOYMENT.

Months.	Total no. of persons employed in		Percentages of			
			Employment in		Unemployment in	
	1904.	1905.	1904.	1905.	1904.	1905.
January	561	607	81.30	82.03	18.70	17.97
February	588	602	85.22	81.35	14.78	18.65
March	590	605	85.51	81.76	14.49	18.24
April	908	616	88.11	83.24	11.89	16.76
May	618	615	89.56	83.10	10.44	16.90
June	637	638	92.32	86.22	7.68	13.78
July	659	728	95.50	98.37	4.50	1.63
August	663	740	96.09	100.—	3.91	
September	690	718	100.—	97.03		2.97
October	669	694	96.96	93.78	3.04	6.22
November	654	672	94.78	90.81	5.22	9.19
December	644	668	93.33	90.27	6.67	9.73
Average	632	659	91.59	89.05	8.41	10.95

TABLE C—OCCUPATIONS AND WAGES OF EMPLOYEES.

Occupations.	Total no. of persons.		Average hours per day.		Average wages per day.		Average wages per hour.		Increase, +, or decrease, —, per day in 1905.	
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	Amt.	Per ct.
Assorters, female ...	1	10			\$1.67		\$.167			
Barn men	1	10			2.00		.200			
Bookkeepers	1	10	10		2.17	\$1.50	.217	\$.150	+.67	30.88
Bookkeepers, female.	6	7	10	10	1.333	1.884	.133	.188	+.551	41.34
Bundlers, female	1	3	10	10	1.18	.947	.118	.095	-.233	19.74
Clerks, female	6	3	10	10	1.20	1.117	.120	.112	-.083	6.92
Drivers	61	6)	9.89	9.93	2.018	2.001	.204		-.017	.84
Dryers, female		1		10		1.10		.110		
Engineers	12	11	10	10	2.67	2.594	.27	.239	+ 1.7	5.61
Firemen	3	3	10	10	1.367	1.70	.137	.170	+ .333	25.09
Foremen	8	7	9.68	10	2.396	2.596	.245	.260	+ .200	8.35
Forewomen	5	4	9.70	10	1.834	1.918	.194	.192	+ .034	1.80
Helpers	5	8	10	10	1.095	.925	.20	.098	-.170	15.53
Helpers, female	52	31	9.37	10	.680	.751		.075	+ .071	10.44
Ironers	7	9	10	9.67	2.214	1.824	.221	.189	-.390	17.62
Ironers, female	200	160	9.78	9.96	1.005	1.000	.103	.100	-.005	.50
Laundresses	177	206	9.76	10	.945	.982	.097	.098	+ .037	3.88
Machine operators,										
female	43	36	10	10	1.128	.944	.113	.094	-.184	16.31
Manglers, female	8	24	10	10	.708	.798	.071	.080	+ .09	12.71
Markers	1	1	10	10	2.17	.75	.217	.075	- 1.42	65.44
Markers, female	5	21	9.80	10	1.132	1.105	.116	.111	-.027	23.85
Menders, female	1		9		.75		.083			
Polishers	2	4	10	10	1.96	1.515	.196	.152	-.445	22.70
Polishers, female	1	19	9	10	1.17	.897	.130	.900	-.273	23.33
Repairers		1		10		2.50		.250		
Sorters	3	2	10	10	2.223	2.00	.200	.020	-.223	10.03
Sorters, female	14	15	9.86	10	1.176	1.412	.119	.141	+ .236	20.07
Starchers, female	36	20	9.78	10	1.078	1.173	.110	.117	+ .095	8.81
Washers	29	29	9.91	9.86	1.836	1.204	.185	.122	-.632	34.42
Washers, female	14	20	9.82	9.6	1.125	1.102	.115	.115	-.023	2.04
Watchmen		1		10		1.33		.133		
Total and av.	703	707	9.81	9.96	\$1.179	\$1.192	\$.120	\$.120	+ \$.013	1.10

Remarks.—This industry shows a gain of 4 per cent. in 1905 in the average number of persons employed. The number of days of operation was less by one than in 1904. The average yearly earnings of employees were slightly over 1 per cent. greater. The summer months were each year the season of greatest activity. The average of unemployment was somewhat greater in 1905—11 per cent. as opposed to 8 per cent. in 1904. This industry is carried on perhaps to a larger extent than any other by the work of women. Over $\frac{3}{4}$ of the employees each year were females. They were employed in all of the more important occupations of the industry, the male employees working, with but few exceptions, in the subsidiary occupations. The average daily wages both of males and of females were higher

than the average. The average daily wages of men were \$1.99 in 1904 and \$1.96 in 1905; those of women, \$0.99 in 1904 and \$1.01 in 1905.

G. LIGHT, WATER AND POWER—52 ESTABLISHMENTS.

TABLE A—MANAGEMENT AND OPERATION.

Classification.	Number in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent.
Number of private firms	5	5		
Number of male partners	6	6		
Number of female partners				
Total number of partners	6	6		
Number of corporations	47	47		
Number of male stockholders	429	430	+ 1	0.23
Number of female stockholders	301	302	+ 1	0.32
Total number of stockholders	730	732	+ 2	0.27
Total number of partners and stockholders	736	738	+ 2	0.27
Smallest number of persons employed	954	891	— 63	6.60
Greatest number of persons employed	1,376	1,335	— 41	2.98
Average number of persons employed	1,151	1,101	— 50	4.34
Average days in operation	306	306		
Average yearly earnings	\$566 50	\$567 93	+ \$1.43	0.25

TABLE B—RANGE OF EMPLOYMENT AND OF UNEMPLOYMENT.

Months.	Total no. of persons employed in		Percentages of			
			Employment in		Unemployment in	
	1904.	1905.	1904.	1905.	1904.	1905.
January	989	909	71.88	68.09	28.12	31.91
February	999	919	72.60	68.84	27.40	31.60
March	1,002	891	72.82	63.74	27.18	33.26
April	1,263	1,147	92.00	85.92	8.00	14.08
May	1,376	1,222	100.—	91.54		8.46
June	1,303	1,835	94.69	100.—	5.31	
July	1,251	1,198	90.92	89.30	9.08	10.64
August	1,195	1,154	89.85	89.44	13.15	13.56
September	1,158	1,143	84.16	85.62	15.84	14.38
October	1,167	1,112	84.81	83.30	15.19	16.70
November	1,154	1,098	83.87	82.25	16.13	17.75
December	954	1,081	69.33	89.98	30.67	19.02
Average	1,151	1,101	83.65	82.47	16.35	17.53

TABLE C—OCCUPATIONS AND WAGES OF EMPLOYEES.

Occupations.	Total no. of persons.		Average hours per day.		Average wages per day.		Average wages per hour.		Increase, +, or decrease, —, per day in 1905.	
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	Amt.	Per cent.
Barn men	10	10	10.9	11	\$1.774	\$1.732	\$.163	\$.157	— \$.042	2.37
Blacksmiths	3	1	10	10	2.50	3.00	.250	.300	+ .50	20.
Boiler makers	2	1	10	10	2.75	3.00	.275	.300	+ .25	9.09
Bookkeepers	1	1	10	10	2.00	2.00	.200	.200	.....	.....
Boys	5	5	10	10	.....	.83	.....	.083	.....	.....
Carpenters	15	6	9.73	10	2.707	2.458	.273	.246	— .249	9.12
Callers	7	5	10	10	2.214	2.15	.221	.215	— .064	2.89
Clinkers	6	4	10	12	2.292	2.375	.229	.198	+ .083	3.62
Coal hoisters	10	12	10.2	10.33	2.475	2.493	.243	.241	+ .018	7.27
Collectors	6	6	9.33	8.75	1.733	1.83	.191	.209	+ .047	2.64
Conductors	11	16	11	11	1.615	1.733	.147	.158	+ .118	7.31
Conveyors	4	2	10	12	2.25	2.25	.225	.188	.....	.....
Doctors	21	18	10	12	2.50	2.50	.250	.208	.....	.....
Dynamo tenders	10	6	10.6	9.75	1.75	1.733	.165	.178	— .012	.69
Engineers	73	71	10.88	10.93	2.125	2.146	.195	.196	+ .021	.99
Electricians	23	22	10.30	10.41	2.279	2.453	.221	.235	+ .174	7.63
Firemen	54	48	10.78	11.35	1.684	1.701	.156	.150	+ .017	1.01
Foremen	28	26	10.14	9.88	2.654	2.665	.232	.268	+ .011	4.41
Gas makers	7	23	11.43	10.09	2.227	2.151	.195	.213	— .076	3.41
Gas fitters	93	91	9.52	9.64	2.135	2.091	.220	.215	— .044	2.06
Helpers	100	114	9.86	9.99	1.634	1.629	.163	.163	— .005	.31
Inspectors	5	5	9.2	9.40	2.654	2.67	.288	.234	.....	.....
Lamp trimmers	15	15	10.13	10.27	1.624	1.616	.160	.159	.....	.....
Laborers	489	488	9.99	10.01	1.708	1.90	.171	.189	+ .192	11.24
Line men	31	32	9.55	9.23	2.082	2.007	.219	.216	— .075	3.60
Machinists	15	9	9.87	10	2.65	2.362	.263	.236	— .288	1.09
Manglers	1	1	10	10	3.29	3.29	.329	.....	.....	.....
Masons	12	2	8.33	10	3.958	3.00	.478	.300	— .953	24.20
Meter readers	22	20	9.91	8	2.02	1.963	.204	.245	— .067	2.82
Meter testers	1	1	10	10	1.75	1.75	.175	.....	.....	.....
Meter setters	6	15	10	9.93	1.922	2.033	.192	.205	+ .111	5.77
Motormen	15	12	10.93	11	1.645	1.76	.151	.160	+ .115	6.99
Oilers	10	8	10	10.5	2.00	1.413	.200	.134	— .587	29.35
Painters	1	1	10	10	1.75	1.75	.175	.....	.....	.....
Pavers	1	1	10	10	2.50	2.50	.250	.....	.....	.....
Pipe layers	19	19	10	10	2.355	2.045	.236	.205	— .310	13.17
Repairers	17	31	9.94	9.84	2.103	2.003	.212	.204	— .100	4.71
Scourers	3	2	10	12	2.25	2.50	.225	.208	+ .25	11.11
Solicitors	1	1	10	10	2.25	2.25	.225	.....	.....	.....
Stokers	17	19	11.29	11.37	2.013	2.123	.178	.187	+ .105	5.20
Stove handlers	2	5	10	10	1.54	1.54	.154	.....	.....	.....
Switchmen	2	3	10	10	1.75	1.837	.175	.187	+ .117	6.69
Teamsters	17	29	10	9.93	1.804	1.819	.180	.182	+ .015	.33
Telephone girls	1	1	11	12	.83	.733	.075	.067	— .097	11.69
Watchmen	1	1	10	10.67	1.667	1.56	.167	.156	— .107	6.41
Total and av.	1,186	1,205	10.07	10.14	\$1.922	\$1.867	\$.191	\$.184	— \$.055	2.86

Remarks.—The tables indicate a slight loss in this industry for 1905. There was a decrease of 4 per cent. in the number of employees, and of about 3 per cent. in their average daily wages. Their yearly earnings were slightly greater however in 1905. Employment was less regular, the average of unemployment being 18 per cent. as against 16 per cent. in 1904. The average hours of all employees were slightly over 10 per day. Female

help was employed only in the subsidiary occupation of telephone operators, one person being employed in that capacity in 1904 and three in 1905. Their hours were 11 and 12 per day for the two years respectively. Their daily wages were less than the average; those of male employees somewhat higher than the average.

H. LITHOGRAPHING AND ENGRAVING—11 ESTABLISHMENTS.

TABLE A—MANAGEMENT AND OPERATION.

Classification.	Number in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent.
Number of private firms	1	1		
Number of male partners	1	1		
Number of female partners				
Total number of partners	1	1		
Number of corporations	10	10		
Number of male stockholders	66	66		
Number of female stockholders	8	8		
Total number of stockholders	74	74		
Total number of partners and stockholders	75	75		
Smallest number of persons employed	546	569	+ 23	4.21
Greatest number of persons employed	633	646	+ 13	2.05
Average number of persons employed	589	605	+ 16	2.69
Average days in operation	306	306		
Average yearly earnings	\$569 92	\$572 78	+ \$2 86	0.50

TABLE B—RANGE OF EMPLOYMENT AND OF UNEMPLOYMENT.

Months.	Total no. of persons employed in		Percentage of			
	1904.	1905.	Employment in		Unemployment in	
			1904.	1905.	1904.	1905.
January	578	609	91.31	94.27	8.69	5.73
February	594	605	93.84	93.65	6.16	6.35
March	546	646	86.26	100.—	13.74	
April	564	627	89.10	97.06	10.90	2.94
May	593	600	93.68	92.88	6.32	7.12
June	579	574	91.47	92.42	8.53	7.58
July	589	569	93.05	88.08	6.95	11.92
August	591	591	93.36	91.49	6.64	8.51
September	603	613	95.26	94.89	4.74	5.11
October	633	615	100.—	95.20		4.80
November	603	600	95.26	92.88	4.74	7.12
December	599	614	94.63	95.05	5.37	4.95
Average	589	605	93.05	93.65	6.95	6.35

TABLE C—OCCUPATIONS AND WAGES OF EMPLOYEES.

Occupations.	Total no. of persons.		Average hours per day.		Average wages per day.		Average wages per hour.		Increase, +, or decrease, —, per day in 1905.		
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	Amt.	Per ct.	
Apprentices	24	60	8.29	8.67	.838	.848	.101	.098	—	.003	.36
Artists	34	43	8.40	8.68	4.036	3.803	.480	.438	—	.012	1.04
Battery men	1	1	.....	.....	.....	.....	2.00	.222	.....	.....	.....
Book binders	24	21	8.88	8.76	2.040	2.199	.23	.251	+	.021	1.03
Book binders, female	36	61	8.53	8.69	.692	.732	.081	.084	+	.003	.43
Book binders' helpers	9	6	9	9	.749	1.048	.083	.116	+	.033	4.41
Boys	55	52	8.78	8.69	.644	.70	.073	.081	+	.008	1.24
Clerks	4	4	8.50	8.50	2.375	2.088	.279	.246	—	.033	1.39
Clerks, female .....	.....	6	.....	.....	.....	.733	.081	.....	.....	.....	.....
Compositors	31	19	9	9	2.791	2.232	.31	.238	—	.072	2.53
Cutters	17	17	8.76	8.77	2.029	2.149	.232	.245	+	.013	.64
Dampeners	2	2	8	8	1.50	1.50	.188	.188	.....	.....	.....
Designers	5	5	8	8	4.066	.....	.....	.508	.....	.....	.....
Die cutters, female.....	5	5	.....	.....	.....	.69	.077	.....	.....	.....	.....
Electrotypers	7	5	9	9	2.166	2.80	.241	.311	+	.070	3.23
Engineers	4	5	8.75	8.80	2.583	2.46	.295	.280	—	.015	.78
Engravers	50	37	8.68	8.59	3.641	3.676	.419	.416	—	.003	.03
Etchers	2	10	8	8.60	3.565	3.041	.445	.354	—	.091	2.55
Feeders	64	65	8.83	8.83	1.468	1.60	.166	.181	+	.015	1.02
Finishers	4	6	8.50	8.67	3.033	2.862	.357	.38	—	.027	8.89
Firemen	2	2	8.50	8.50	2.125	2.00	.25	.225	—	.015	.71
Foremen	4	.....	8.50	.....	3.708	.....	.436	.....	.....	.....	.....
Helpers	63	38	8.87	8.79	.884	.753	.10	.086	—	.014	1.58
Helpers, female	72	29	8.98	9	.618	.63	.069	.070	+	.001	1.66
Laborers	5	9	8.40	8.56	1.71	1.509	.204	.176	—	.028	1.61
Linotypists	5	5	9	9	3.066	3.236	.341	.38	+	.019	.62
Lithographers	12	.....	8	.....	3.298	.....	.412	.....	.....	.....	.....
Molders	1	3	9	9	3.50	2.00	.389	.222	—	.167	4.77
Photographers	3	10	8	8.40	3.947	3.826	.493	.455	—	.038	.96
Pressmen	34	48	9	8.77	3.347	3.465	.372	.335	+	.023	.68
Printers	8	10	8.50	8.50	2.229	2.495	.262	.294	+	.032	1.43
Provers	5	6	8.60	8.67	3.300	3.457	.384	.399	+	.015	.46
Routees	1	.....	8	.....	3.00	.....	.375	.....	.....	.....	.....
Shippers .....	.....	2	.....	9	.....	2.32	.....	.258	.....	.....	.....
Stencilers	1	.....	9	.....	1.17	.....	.13	.....	.....	.....	.....
Stencilers, female.....	2	2	9	9	.75	.75	.083	.083	.....	.....	.....
Stone grinders	9	10	8.56	8.60	2.042	2.178	.239	.253	+	.014	.69
Stone polishers	3	2	9	9	2.22	2.50	.247	.278	+	.031	1.40
Teamsters	1	.....	9	.....	2.67	.....	.297	.....	.....	.....	.....
Transferrers	29	32	8.76	8.66	3.319	3.607	.379	.417	+	.038	1.14
Trimmers	1	2	9	9	2.00	2.50	.222	.278	+	.056	2.80
Watchmen	1	2	9	8.50	2.00	1.715	.222	.202	—	.020	1.00
Total	619	639	8.75	8.74	\$1.906	\$1.979	\$.218	\$.226	+	\$.008	.42

Remarks.—For the industry of lithographing and engraving the tables show in general a moderate gain for 1905. There was an increase of 3 per cent. in the number of persons employed, a slight increase in their average yearly earnings, and a greater uniformity of employment from month to month. Employment was exceptionally regular each year, the average unemployment being only 7 per cent. in 1904 and 6 per cent. in 1905. The average hours of labor for all employes were about 8¾ per day, much shorter than the average hours for all industries.

About one-sixth of the total number of employes were women. They were employed chiefly in some of the lighter occupations peculiar to the industry. Their wages averaged \$.65 per day in 1904 and \$.70 in 1905—much less than the average daily wages for women in all industries. Men's wages, on the contrary, were higher than the average, being \$2.18 in 1904 and \$2.23 in 1905. About 6 per cent. fewer women were employed in 1905 than in the preceding year.

I. PRINTING AND PUBLISHING—112 ESTABLISHMENTS.

TABLE A—MANAGEMENT AND OPERATION.

Classification.	Number in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Number of private firms	74	73	— 1	1.35
Number of male partners	102	96	— 6	5.88
Number of female partners	9	9	.....	.....
Total number of partners	111	105	— 6	5.41
Number of corporations	38	39	+ 1	2.63
Number of male stockholders	296	301	+ 5	1.69
Number of female stockholders	37	37	.....	.....
Total number of stockholders	333	333	.....	1.50
Total number of partners and stockholders..	444	443	+ 5	1.12
Smallest number of persons employed.....	1,144	1,165	+ 21	1.84
Greatest number of persons employed.....	1,211	1,217	+ 6	0.50
Average number of persons employed.....	1,167	1,182	+ 15	1.29
Average days in operation	314	317	+ 3	0.96
Average yearly wages	\$477 81	\$486 39	+ \$8 58	1.80

TABLE B—RANGE OF EMPLOYMENT AND OF UNEMPLOYMENT.

Months.	Total no. of persons employed in		Percentages of			
			Employment in		Unemployment in	
	1904.	1905.	1904.	1905	1904.	1905.
January	1,151	1,171	95.05	96.22	4.95	3.78
February	1,144	1,188	94.47	97.62	5.53	2.38
March	1,165	1,189	96.20	97.70	3.80	2.30
April	1,159	1,179	95.71	96.88	4.29	3.12
May	1,148	1,175	94.80	96.55	5.20	3.45
June	1,161	1,165	95.87	95.73	4.13	4.27
July	1,182	1,163	97.61	95.81	2.39	4.19
August	1,167	1,178	96.37	96.80	3.63	3.20
September	1,154	1,180	95.30	96.96	4.70	3.04
October	1,173	1,187	96.86	97.54	3.14	2.46
November	1,193	1,191	98.52	97.86	1.48	2.14
December	1,211	1,217	100.—	100.—	.....	.....
Average	1,167	1,182	96.37	97.12	3.63	2.88

TABLE C—OCCUPATIONS AND WAGES OF EMPLOYEES.

Occupations.	Total no. of persons.		Average hours per day.		Average wages per day.		Average wages per hour.		Increase, +, or decrease, —, per day in 1905.	
	1904.	1905.	1904	1905	1904.	1905.	1904.	1905.	Amt.	Per ct.
Advertising clerks ...	7	13	8.64	9.15	\$2.408	\$2.229	\$.278	\$.244	— \$.174	7.24
Apprentices	42	47	9.18	9.17	.759	.775	.082	.085	+ .016	2.19
Artists	1	1	8.50	9	3.33	.450	.392	.50	+ 1.17	35.14
Bank men .....	.....	1	.....	8	.....	3.00	.....	.375	.....	.....
Binders	10	12	9.65	9.63	2.014	2.022	.209	.21	+ .008	.4
Binders, female	49	70	9.12	9.19	.71	.772	.078	.084	+ .062	8.73
Bookkeepers	2	6	9	8.71	1.915	2.388	.213	.274	+ .473	24.7
Bookkeepers, female	4	5	9.50	9.60	1.415	1.593	.148	.166	+ .181	12.79
Boys	30	30	8.87	9.36	.59	.714	.067	.076	+ .124	21.02
Bundlers	1	10	.....	1.75	.....	1.75	.....	.175	.....	.....
Carriers	78	78	1.50	1.56	.189	.20	.112	.128	+ .012	6.38
Cashiers, female	1	1	8	.....	1.67	.....	.200	.....	.....	.....
Clerks	1	5	8	10	2.00	2.00	.25	.20	.....	.....
Clerks, female	2	2	9	9.50	.75	.625	.083	.036	— .125	16.67
Collectors	4	4	9.56	9.50	1.60	2.415	.167	.254	+ .815	50.94
Compositors	203	166	8.33	9.08	2.343	2.295	.281	.253	— .048	2.05
Compositors, female	80	99	9.01	9.26	1.139	1.107	.126	.12	— .082	2.89
Cutters	8	8	9.25	8	2.135	2.344	.231	.293	+ .200	9.79
Drivers	7	6	8.86	8.67	1.599	1.89	.18	.218	+ .291	18.2
Editors	12	9	9.21	9.56	3.445	3.036	.374	.317	— .409	11.87
Electricians	1	1	9	9	3.00	3.33	.333	.37	+ .38	11
Elevator men	4	3	10	9.33	1.167	1.167	.117	.125	.....	.....
Engineers	1	1	10	10	4.00	4.00	.40	.40	.....	.....
Finishers, female	5	5	10	10	1.60	1.00	.16	.10	.....	.....
Firemen	2	2	10	10	3.00	3.00	.30	.30	.....	.....
Folders, female	9	.....	9.11	.....	.593	.....	.065	.....	.....	.....
Foremen	27	26	9.38	9.08	2.926	3.034	.312	.334	+ .103	3.69
Forewomen	1	1	9	9	1.33	1.33	.148	.148	.....	.....
Helpers	77	66	9.10	9.33	.889	1.031	.098	.111	+ .142	15.97
Helpers, female	10	3	9.65	10	.776	1.08	.08	.108	+ .304	39.18
Janitors	4	2	9.50	9.50	2.023	2.00	.213	.211	— .023	1.14
Janitors, female .....	.....	1	.....	10	.....	2.00	.....	.200	.....	.....
Laborers .....	.....	7	.....	10	.....	1.607	.....	.161	.....	.....
Linotypists	28	47	8.53	8.44	2.96	3.246	.347	.385	+ .286	9.66
Machinists	3	11	8.08	9.45	3.553	2.773	.44	.293	— .78	21.95
Mailing clerks	4	9	8.31	8.56	1.54	1.438	.185	.168	— .102	6.62
Make-up men .....	.....	4	.....	9	.....	2.688	.....	.299	.....	.....
Managers	4	3	9.06	10	4.413	3.427	.487	.343	— .986	22.31
Office girls .....	.....	1	.....	9	.....	.50	.....	.056	.....	.....
Packers .....	.....	1	.....	10	.....	2.50	.....	.25	.....	.....
Press feeders	114	118	9.13	9.10	1.435	1.391	.157	.153	— .044	3.07
Pressmen	68	99	8.94	9.19	2.565	2.395	.287	.261	— .170	6.63
Printers	230	193	9.48	9.17	2.009	2.006	.212	.219	— .003	.14
Printers, female	2	.....	10	.....	.75	.....	.075	.....	.....	.....
Printers' devils	3	4	9.33	9	.723	.75	.077	.083	— .027	3.73
Proofreaders	1	4	8	9	3.33	3.258	.416	.362	— .072	2.16
Proofreaders, female	4	5	8.25	8.60	2.508	1.97	.304	.229	— .538	21.45
Reporters	22	23	9.19	9.37	2.244	2.121	.244	.226	— .123	5.48
Reporters, female	3	1	9.33	10	.61	.65	.065	.065	+ .04	6.56
Rulers	1	1	9.50	9	2.45	2.66	.258	.296	+ .21	8.57
Rulers, female	9	.....	9.50	.....	.979	.....	.103	.....	.....	.....
Solicitors	2	1	8.83	9	1.917	2.00	.217	.222	+ .083	4.33
Stenographers .....	.....	3	.....	9.33	.....	2.00	.....	.214	.....	.....
Stenographers, female	3	5	9	9	.90	1.14	.10	.127	+ .24	26.67
Stereotypers	16	9	8.35	8.56	2.733	2.916	.327	.341	+ .18	6.70
Stockmen	3	6	9.33	9.17	2.14	1.97	.229	.215	— .17	7.94
Telegraph operators .....	.....	1	.....	10	.....	2.75	.....	.275	.....	.....
Total	1,198	1,232	9.03	9.41	\$1.802	\$1.831	\$.20	\$.194	+ \$.019	1.05

Remarks.—This industry experienced a moderate growth in 1904 and 1905. For the latter year the tables show an increase of 1 per cent. in the average number of persons employed and in the average number of days of operation, and of 2 per cent. in the average yearly earnings of employees. Employment was remarkably uniform from month to month, the maximum of unemployment being less than 6 per cent. in 1904 and but slightly over 4 per cent. in 1905. About 15 per cent. of all employees were females. They were employed chiefly in the regular occupations of the industry. Their daily wages averaged \$1.00 in 1904 and \$1.02 in 1905. These wages were considerably higher than the average wages of women for all industries. The average daily wages of men were \$1.82 in 1904 and \$1.85 in 1905. The average hours for all employees were about 9 per day in 1904, but increased to nearly 9½ per day in the following year. It should be noted that in Table C the hours and wages of Carriers were not included in the calculation of the final averages, owing to the very brief period per day these persons were employed.

J. TOBACCO WAREHOUSES—16 ESTABLISHMENTS.

TABLE A—MANAGEMENT AND OPERATION.

Classification.	Number in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Number of private firms	8	8		
Number of male partners	11	11		
Number of female partners				
Total number of partners	11	11		
Number of corporations	8	8		
Number of male stockholders	14	14		
Number of female stockholders				
Total number of stockholders	14	14		
Total number of partners and stockholders..	25	25		
Smallest number of persons employed.....	242	275	+ 33	13.64
Greatest number of persons employed.....	1,733	1,749	+ 16	0.92
Average number of persons employed.....	688	752	+ 64	9.30
Average days in operation	244	243	— 1	0.41
Average yearly earnings	\$307 07	\$306 27	— \$1 40	0.46

TABLE B—RANGE OF EMPLOYMENT AND OF UNEMPLOYMENT.

Months.	Total no. of persons employed in		Percentage of			
			Employment in		Unemployment in	
	1904.	1905.	1904.	1905.	1904.	1905.
January	270	1,158	15.58	66.21	84.42	33.79
February	433	1,563	24.99	89.37	75.01	10.63
March	1,733	1,749	100.—	100.—		
April	1,687	1,516	97.35	86.68	2.65	13.32
May	1,230	889	70.98	50.83	29.02	49.17
June	929	361	53.68	20.64	46.32	79.33
July	628	319	36.24	18.24	63.76	81.76
August	316	275	18.23	15.72	81.77	84.23
September	268	292	15.46	16.70	84.54	83.30
October	250	296	14.43	16.92	85.57	83.08
November	266	285	15.35	16.29	84.65	83.71
December	242	325	13.96	18.58	86.04	81.42
Average	683	752	39.70	43.00	60.30	57.00

TABLE C— OCCUPATIONS AND WAGES OF EMPLOYEES.

Occupations.	Total no. of persons.		Average hours per day.		Average wages per day.		Average wages per hour.		Increase, +, or decrease, —, per day in 1905.	
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	Amt.	Per ct.
	Assorters	110	137	9.63	9.21	\$1.199	\$1.297	\$.124	\$.141	+.098	8.17
Assorters, female	740	758	9.29	9.31	1.007	1.075	.108	.115	+.068	6.75
Bundle clerks		4		10		1.50		.15		
Carpenters	8	19	10	9.80	1.668	1.72	.167	.176	+.032	3.12
Casers	4	5	8	8	1.875	1.968	.234	.292	+.093	4.93
Card punchers		1		10		1.67		.167		
Carriers	23	26	10	10	1.467	1.49	.147	.149	+.023	1.57
Cutters	10	11	8	8	2.484	2.47	.311	.309	-.014	-.533
Dressers	2	3	8	8.67	2.50	2.50	.312	.238		
Dressers, female		2		8		1.00		.125		
Dryers	8	9	8	8	2.125	2.204	.266	.276	+.079	3.72
Engineers	2	2	9	9	3.32	3.15	.369	.35	-.17	5.13
Feeders, female	6	3	8	8	.887	1.00	.111	.125	+.113	12.74
Firemen	3	4	9.33	9	2.103	1.937	.225	.215	-.066	3.14
Foremen	4	7	9.50	10	2.418	2.357	.255	.236	-.061	2.52
Graders	5	2	8	10	2.20	2.25	.275	.225	+.05	2.27
Grinders	2		9		2.335		.259			
Handlers	68	55	9.45	10	1.131	.841	.113	.094	-.290	25.64
Handlers, female	1		8		1.50		.188			
Hand sizers	204	118	10	9.24	.775	1.125	.078	.122	+.35	45.13
Hand sizers, female	305	300	10	9	.80	1.00	.08	.111	+.20	25.00
Helpers	69	34	9.54	9.13	1.109	1.142	.116	.124	+.033	2.90
Helpers, female	34	2	9	9	1.243	1.33	.138	.148	+.097	7.80
Inspectors	31	28	10	10	2.018	1.982	.202	.198	-.036	1.78
Janitors	5	2	10	10	1.55	1.25	.155	.125	-.30	19.55
Laborers	50	67	9.96	9.94	1.659	1.569	.167	.158	-.093	5.61
Labelers, female	15	37	10	8	1.033	.923	.103	.113	-.11	10.64
Nailers	3		9.33		1.567		.168			
Packers	107	115	9.70	9.50	1.832	1.853	.194	.196	+.024	1.23
Packers, female	2	20	8	8	1.00	1.196	.125	.149	+.196	19.6
Printers	3	5	8	8	2.22	2.166	.278	.271	-.054	2.43
Samplers	1	1	10	10	2.00	2.00	.20	.20		
Shippers	3	8	8	8	2.163	2.583	.27	.323	+.42	19.60
Stampers	6	6	8	8	1.805	1.472	.226	.184	-.333	18.45
Stampers, female	15	1	8	8	.943	1.50	.118	.187	+.357	59.07
Stencilers	2	4	10	10	1.25	1.25	.125	.125		
Strippers	10		8		1.00		.125			
Strippers, female		20		8		.83		.10		
Sweepers	3		10		1.033		.108			
Teamsters	2	4	8	9	2.50	2.375	.312	.264	-.125	5.00
Timekeepers		1		10		1.75		.175		
Watchmen	1	2	12	11	2.67	2.12	.222	.193	-.55	20.97
Weighers	1	8	10	10	2.00	1.563	.20	.156	-.437	21.85
Weighers, female	9	12	8	8	.906	.88	.113	.11	-.026	2.87
Total	1,877	1,834	9.42	9.04	\$1.106	\$1.210	\$.117	\$.134	+.104	9.40

Remarks.—The stripping, sorting and packing of tobacco immediately after the first thaw of the winter gives employment annually to a large number of persons. The greater part of the work is finished in a few months. This accounts for the large average of unemployment reported—60 per cent. in 1904 and 57 per cent. in 1905. The average number of persons employed was 9 per cent. greater in the latter year. Nearly 2-3 of all employes were females. They were employed in the regular work of the industry, the majority as assorters. There was a substantial increase in their daily wages in 1905, the average for that year being \$1.05 as opposed to \$.96 in 1904. Men's wages increased from \$1.33 to \$1.49, but were still much lower than the average wages for male employees in all industries. A large number of the persons employed in this industry were minors.

K. MISCELLANEOUS—14 ESTABLISHMENTS.

TABLE A—MANAGEMENT AND OPERATION.

Classification.	Number in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent.
Number of private firms.....	13	13	.....	.....
Number of male partners.....	21	21	.....	.....
Number of female partners.....	.....	.....	.....	.....
Total number of partners.....	21	21	.....	.....
Number of corporations.....	1	1	.....	.....
Number of male stockholders.....	2	2	.....	.....
Number of female stockholders.....	1	1	.....	.....
Total number of stockholders.....	3	3	.....	.....
Total number of partners and stockholders.....	24	24	.....	.....
Smallest number of persons employed.....	280	120	— 160	57.14
Greatest number of persons employed.....	442	353	— 84	19.00
Average number of persons employed.....	370	284	— 86	23.24
Average days in operation.....	263	270	+ 7	0.75
Average yearly earnings.....	\$424 73	\$446 67	+\$21 99	5.15

TABLE B—RANGE OF EMPLOYMENT AND OF UNEMPLOYMENT.

Months.	Total no. of persons employed in		Percentages of			
			Employment in		Unemployment in	
	1904.	1905.	1904.	1905.	1904.	1905.
January	280	120	63.35	33.52	36.65	66.48
February	305	190	69.01	53.07	30.99	46.93
March	332	208	75.11	58.10	24.89	41.90
April	414	331	93.67	92.46	6.33	7.54
May	391	277	89.46	77.38	11.54	22.61
June	442	318	100.—	88.83	.....	11.17
July	399	318	90.27	88.83	9.73	11.17
August	386	354	87.33	98.88	12.67	1.12
September	415	358	93.89	100.—	6.11	.....
October	403	356	91.18	99.44	8.82	0.56
November	362	340	83.81	94.97	16.19	5.03
December	314	233	71.04	65.09	28.96	34.91
Average	370	284	83.71	79.33	16.29	20.67

TABLE C—OCCUPATIONS AND WAGES OF EMPLOYEES.

Occupations.	Total no of persons.		Average hours per day.		Average wages per day.		Average wages per hour.		Increase, +, or decrease, —, per day in 1905.	
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	Amt.	Per ct.
Bottle washers	1	1	9	.....	\$2.00	.....	\$ .222	.....	.....	.....
Carpenters	1	1	10	.....	2.25	.....	.....	.....	.....	.....
Cement workers	21	14	10	10	\$2.024	2.171	\$.202	.217	+ \$.147	7.26
Clerks	2	4	10	9.25	1.625	1.895	.162	.187	+ .240	14.77
Clerks, female	120	6	9	9	.938	.82	.104	.911	— .118	12.53
Curb setters	4	.....	10	.....	4.00	.....	.400	.....	.....	.....
Deckmen	3	.....	9	.....	1.50	.....	.164	.....	.....	.....
Electricians	5	10	10	10	2.20	2.25	.220	.225	+ .05	2.27
Engineers	5	5	9.8	10.8	2.35	2.45	.240	.227	+ .10	4.26
Feeders, female .....	.....	7	.....	9	.....	.95	.....	.106	.....	.....
Firemen	2	2	10	10	1.625	1.625	.163	.163	.....	.....
Fishermen .....	.....	3	.....	12	.....	1.75	.....	.146	.....	.....
Foremen	6	7	10	10	2.343	2.679	.234	.268	+ .337	14.39
Graders	2	5	10	10	3.00	2.30	.300	.230	— .70	23.33
Helpers	16	7	9.63	9.85	1.333	1.379	.138	.149	+ .046	3.45
Helpers, female .....	.....	1	.....	10	.....	1.01	.....	.101	.....	.....
Laborers	172	137	9.64	9.99	1.75	1.839	.182	.184	+ .089	5.09
Linemen	3	.....	10	.....	2.50	.....	.250	.....	.....	.....
Masons	1	3	10	10	2.75	3.50	.275	.350	+ .25	9.00
Masons' helpers	2	.....	9	.....	1.75	.....	.194	.....	.....	.....
Millers	1	1	10	10	2.25	2.00	.225	.200	— .25	11.11
Pavers	7	4	10	10	2.736	3.00	.279	.300	+ .214	7.68
Pile drivers	15	15	10	10	2.167	2.167	.217	.217	.....	.....
Pipe layers	1	.....	9	.....	2.75	.....	.306	.....	.....	.....
Pipe layers' helpers	2	.....	9	.....	1.75	.....	.194	.....	.....	.....
Plumbers	8	7	8	8	3.406	3.283	.426	.411	— .120	3.52
Plumbers' helpers	1	1	9	8	.75	1.00	.833	.125	+ .25	33.33
Printers	12	13	9.25	9.23	2.769	2.025	.297	.219	— .744	23.26
Pumpmen	4	4	9.5	9.5	2.00	2.00	.215	.215	.....	.....
Pumpmen's helpers	4	2	9.5	9	1.625	1.50	.171	.164	— .125	7.69
Roofers	1	1	10	10	2.00	2.00	.200	.200	.....	.....
Steam fitters	7	10	8	8	3.00	2.775	.375	.347	— .225	7.50
Steam fitters' helpers	5	9	8	8	1.50	1.417	.188	.177	— .083	4.87
Stenographers	1	.....	10	.....	1.50	.....	.150	.....	.....	.....
Teamsters	16	15	10	9.93	3.313	1.847	.331	.193	— 1.465	44.25
Warehousemen .....	.....	3	.....	10	.....	1.833	.....	.183	.....	.....
Watchmen .....	.....	1	.....	10	.....	1.75	.....	.175	.....	.....
Wrappers, female	4	6	10	9.17	1.085	1.153	.109	.126	+ .068	6.27
Total and average	453	305	9.53	9.73	\$1.738	\$1.947	\$.182	\$.200	+ \$.213	12.28

Remarks.—There was a decrease of 23 per cent. in 1905 in the number of persons employed in the miscellaneous industries which are included in this group, and an increase of 5 per cent. in their average yearly earnings. The average number of days of operation was small each year—268 and 270. Employment was very irregular, a maximum of 37 per cent. of unemployment occurring in 1904 and of 66 per cent. in 1905. Women were employed chiefly in subsidiary occupations. Their average daily wages were \$.94 in 1904 and \$.99 in 1905. Men's wages for the two years were \$2.03 and \$2.02. The wages of both were therefore higher than the average, each year.

L. SUMMARY OF 11 INDUSTRIES—415 ESTABLISHMENTS.

TABLE A—MANAGEMENT AND OPERATION.

Classification.	Number in		Increase, +, or decrease, —, in 1905.		
	1904.	1905.			
			Amount.	Per cent	
Number of private firms	255	254	—	1	.39
Number of male partners	350	344	—	6	1.71
Number of female partners	16	17	+	1	6.25
Total number of partners	366	361	—	5	1.37
Number of corporations	160	161	+	1	.63
Number of male stockholders	1,420	1,426	+	6	.42
Number of female stockholders	374	376	+	2	.54
Total number of stockholders	1,794	1,802	+	8	.45
Total number of partners and stockholders..	2,160	2,163	+	3	.14
Greatest number of persons employed.....	5,799	6,834	+	1,035	17.85
Average number of persons employed.....	8,006	7,819	—	187	2.34
Average days in operation	7,239	7,326	+	87	1.20
Average yearly earnings	289	289			
	\$491 21	\$489 47	—	\$1.74	.35

TABLE B—RANGE OF EMPLOYMENT AND OF UNEMPLOYMENT.

Months.	Total no. of persons employed in		Percentages of			
	1904.	1905.	Employment in		Unemployment in	
			1904.	1905	1904.	1905.
January	5,799	6,834	72.43	87.40	27.57	12.60
February	6,108	7,339	76.29	93.89	23.71	6.14
March	7,400	7,486	92.43	95.74	7.57	4.26
April	7,887	7,819	98.51	100.—	1.49	.....
May	7,977	7,671	99.63	98.09	0.37	1.91
June	7,885	7,297	93.49	93.32	1.51	6.68
July	8,006	7,223	100.—	93.33	.....	6.62
August	7,507	7,306	93.77	93.57	6.23	6.43
September	7,475	7,318	93.37	93.72	6.63	6.28
October	7,392	7,310	92.33	93.49	7.67	6.51
November	7,032	7,314	87.33	93.54	12.17	6.46
December	6,397	6,993	79.89	89.44	20.11	10.56
Average	7,239	7,326	90.42	93.69	9.58	6.31

TABLE C—CLASSIFICATION OF DAILY WAGES.

Classified daily wages, (inclusive).	Total number of persons employed.						Average wages per day.					
	Male.		Female.		Total.		Male.		Female.		Total.	
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.
\$.33 or less..	87	86	6	4	93	90	\$0.20	\$0.209	\$0.29	\$0.31	\$0.206	\$0.214
.34 to .41.	5	11	2	4	7	15	.376	.381	.40	.402	.383	.387
.42 to .49.	4	2	14	9	18	11	.448	.435	.435	.447	.438	.445
.50 to .58.	93	89	107	98	200	187	.518	.517	.515	.527	.516	.522
.59 to .66.	47	32	33	32	80	64	.622	.614	.614	.611	.617	.613
.67 to .74.	58	30	100	112	158	242	.682	.678	.691	.712	.685	.707
.75 to .83.	329	144	651	254	930	398	.763	.765	.788	.794	.780	.784
.84 to .91.	21	51	199	98	220	149	.870	.871	.850	.883	.852	.880
.92 to .99.	4	16	69	138	73	154	.920	.937	.941	.947	.940	.946
1.00 to 1.08.	234	262	389	630	623	892	1.001	1.003	1.005	1.008	1.003	1.007
1.09 to 1.16.	12	16	78	23	90	39	1.138	1.123	1.101	1.107	1.106	1.113
1.17 to 1.24.	45	62	72	167	117	229	1.188	1.173	1.189	1.176	1.188	1.175
1.25 to 1.33.	168	183	322	136	490	319	1.265	1.269	1.269	1.267	1.268	1.268
1.34 to 1.41.	81	42	6	45	87	87	1.391	1.363	1.392	1.353	1.391	1.358
1.42 to 1.49.	14	37	2	97	16	134	1.436	1.475	1.470	1.479	1.434	1.477
1.50 to 1.58.	729	711	57	73	786	784	1.502	1.501	1.503	1.501	1.502	1.501
1.59 to 1.06.	301	307	9	12	310	319	1.646	1.637	1.623	1.648	1.645	1.637
1.67 to 1.74.	129	197	13	11	142	208	1.675	1.691	1.681	1.670	1.678	1.690
1.75 to 1.83.	1,332	1,256	3	5	1,385	1,261	1.756	1.758	1.803	1.780	1.756	1.758
1.84 to 1.91.	146	108	.....	2	146	110	1.863	1.885	.....	1.870	1.863	1.876
1.92 to 1.99.	19	19	.....	.....	19	19	1.920	1.930	.....	.....	1.920	1.930
2.00 to 2.08.	1,090	1,096	3	3	1,093	1,104	2.001	2.001	2.00	2.00	2.001	2.001
2.09 to 2.16.	48	80	.....	.....	48	80	2.138	2.120	.....	.....	2.138	2.120
2.17 to 2.24.	30	58	.....	2	30	60	2.182	2.183	.....	2.200	2.182	2.183
2.25 to 2.33.	504	511	.....	.....	504	511	2.259	2.259	.....	.....	2.259	2.259
2.34 to 2.41.	56	49	.....	.....	56	49	2.392	2.385	.....	.....	2.392	2.385
2.42 to 2.49.	29	7	.....	.....	29	7	2.476	2.453	.....	.....	2.476	2.453
2.50 to 2.58.	506	594	4	5	510	599	2.502	2.501	2.50	.....	2.502	2.501
2.59 to 2.66.	34	29	.....	.....	34	29	2.641	2.625	.....	.....	2.641	2.625
2.67 to 2.74.	43	54	.....	.....	43	54	2.682	2.682	.....	.....	2.682	2.682
2.75 to 2.83.	235	181	1	6	236	187	2.784	2.780	2.839	2.788	2.784	2.780
2.84 to 2.91.	48	36	2	1	50	37	2.864	2.858	2.850	2.850	2.863	2.858
2.92 to 2.99.	3	2	.....	.....	3	2	2.923	2.935	.....	.....	2.923	2.935
3.00 to 3.08.	186	214	2	2	188	216	3.00	3.005	3.00	3.00	3.00	3.004
3.09 to 3.16.	7	3	.....	.....	7	3	3.160	3.140	.....	.....	3.160	3.140
3.17 to 3.24.	14	38	.....	.....	14	38	3.184	3.218	.....	.....	3.184	3.218
3.25 to 3.33.	57	69	.....	.....	57	69	3.305	3.300	.....	.....	3.305	3.300
3.34 to 3.41.	13	20	.....	.....	13	20	3.371	3.354	.....	.....	3.371	3.354
3.42 to 3.49.	3	3	.....	.....	3	3	3.447	3.460	.....	.....	3.447	3.460
3.50 to 3.58.	76	75	.....	.....	76	75	3.501	3.501	.....	.....	3.501	3.501
3.59 to 3.66.	19	18	.....	.....	19	18	3.617	3.615	.....	.....	3.617	3.615
3.67 to 3.74.	11	19	.....	.....	11	19	3.683	3.702	.....	.....	3.683	3.702
3.75 to 3.83.	24	17	.....	.....	24	17	3.772	3.775	.....	.....	3.772	3.775
3.84 to 3.91.	22	9	.....	.....	22	9	3.877	3.867	.....	.....	3.877	3.867
3.92 to 3.99.	.....	11	.....	.....	.....	11	.....	3.980	.....	.....	.....	3.980
4.00 to 4.08.	138	47	.....	.....	138	47	4.005	4.002	.....	.....	4.005	4.002
4.09 to 4.16.	.....	14	.....	.....	.....	14	.....	4.130	.....	.....	.....	4.130
4.17 to 4.24.	26	12	.....	.....	26	12	4.190	4.185	.....	.....	4.190	4.185
4.25 to 4.33.	5	6	.....	.....	5	6	4.228	4.272	.....	.....	4.228	4.272
4.34 to 4.41.	4	1	.....	.....	4	1	4.450	4.420	.....	.....	4.450	4.420
4.42 to 4.49.	4	1	.....	.....	4	1	4.500	4.502	.....	.....	4.500	4.502
4.50 to 4.58.	33	98	.....	.....	33	98	4.500	4.604	.....	.....	4.500	4.604
4.59 to 4.66.	1	5	.....	.....	1	5	4.590	4.710	.....	.....	4.590	4.710
4.67 to 4.74.	3	9	.....	.....	3	9	4.680	4.775	.....	.....	4.680	4.775
4.75 to 4.83.	6	2	.....	.....	6	2	4.830	4.775	.....	.....	4.830	4.775
4.84 to 4.91.	.....	1	.....	.....	.....	1	.....	4.900	.....	.....	.....	4.900
4.92 to 4.99.	.....	1	.....	.....	.....	1	.....	4.920	.....	.....	.....	4.920
5.00 to 5.08.	15	21	.....	.....	15	21	5.00	5.004	.....	.....	5.00	5.004
5.09 to 5.16.	.....	.....	.....	.....	.....	.....	.....	5.420	.....	.....	.....	5.420
5.17 to 5.24.	1	3	.....	.....	1	3	5.50	5.50	.....	.....	5.50	5.50
5.25 to 5.33.	1	5	.....	.....	1	5	5.817	5.824	.....	.....	5.817	5.824
5.34 to 5.41.	7	6	.....	.....	7	6	.....	5.900	.....	.....	.....	5.900
5.42 to 5.49.	.....	.....	.....	.....	.....	.....	.....	6.00	.....	.....	6.00	6.00
5.50 to 5.58.	1	3	.....	.....	1	3	6.33	6.33	.....	.....	6.33	6.33
5.59 to 5.66.	1	3	.....	.....	1	3	.....	6.67	.....	.....	.....	6.67
5.67 to 5.74.	.....	.....	.....	.....	.....	.....	.....	7.50	.....	.....	.....	7.50
5.75 to 7.58.	1	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....
Total and av.	7,321	7,166	2,144	2,470	9,465	9,240	\$2.007	\$2.033	\$.952	\$1.013	\$1.769	\$1.804

Remarks.—For the 11 minor industries as a whole, there was a decrease of 2 per cent. in 1905 in the number of persons employed, and of less than 1 per cent. in the average yearly earnings of employees. The average number of days of operation, 289 each year, was considerably less than the total number of working days in a year. Employment was more uniform in 1905, the average unemployment being but 6 per cent. in that year, as opposed to nearly 10 per cent. in 1904. Female employees were each year somewhat less than $\frac{1}{4}$ of the total number. The daily wages both of men and of women were considerably higher each year than the average wages for the respective sexes in the 51 larger industries.

M. SUMMARY OF 62 INDUSTRIES—1513 ESTABLISHMENTS.

TABLE A—MANAGEMENT AND OPERATION.

Classification.	Number, in		Increase, +, or decrease, —, in 1905.	
	1904.	1905.	Amount.	Per cent
Number of private firms	700	677	— 23	3.29
Number of male partners	1,042	980	— 62	5.95
Number of female partners	56	63	+ 7	12.50
Total number of partners	1,098	1,043	— 55	5.01
Number of corporations	813	836	+ 23	2.83
Number of male stockholders	16,081	12,886	— 3,195	19.87
Number of female stockholders	3,566	2,259	— 1,307	36.65
Total number of stockholders	19,647	15,145	— 4,502	22.91
Total number of partners and stockholders..	20,745	16,188	— 4,557	21.97
Smallest number of persons employed	74,659	80,021	+ 5,372	7.20
Greatest number of persons employed	82,830	89,035	+ 6,205	7.49
Average number of persons employed	80,195	85,436	+ 5,241	6.54
Average days in operation	298	300	+ 2	0.67
Average yearly earnings	\$467 69	\$471 30	+ \$3 61	0.78

TABLE B—RANGE OF EMPLOYMENT AND OF UNEMPLOYMENT.

Months.	Total no. of persons employed in		Percentages of			
			Employment in		Unemployment in	
	1904.	1905.	1904.	1905.	1904.	1905.
January	74,659	80,031	90.13	89.89	9.87	10.11
February	76,322	80,964	92.14	90.93	7.86	9.07
March	78,910	82,469	95.27	93.75	4.73	6.25
April	79,812	84,484	96.36	94.89	3.64	5.11
May	82,179	85,533	99.21	96.07	0.79	3.93
June	82,746	85,618	99.90	96.16	0.10	3.84
July	82,532	86,114	99.64	96.72	0.36	3.28
August	82,830	87,288	100.—	98.04	.....	1.96
September	81,998	87,843	98.99	98.63	1.01	1.34
October	81,298	88,267	98.15	99.14	1.85	0.86
November	80,693	89,035	97.42	100.—	2.58	.....
December	78,355	86,581	94.60	97.24	5.40	2.76
Average	80,195	85,436	96.82	95.96	3.18	4.04

TABLE C.—NUMBER AND WAGES OF EMPLOYEES IN ALL INDUSTRIES.

(1) SUMMARY OF 51 INDUSTRIES—1,098 ESTABLISHMENTS.

Number.	Industries.	Total no. of persons.						Average wages per day.						Increase, +, decrease, —, per day in 1905.					
		Male.		Female.		Total.		Male.		Female.		Total.		Male.		Female.		Total.	
		1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.	Amt	Prct	Amt	Prct.	Amt.	Prct.
								\$	\$	\$	\$	\$	\$						
1	Agricultural implements	3,198	3,673	14	22	3,212	3,695	1,848	1,978	1,000	.987	1,844	1,972	+ .130	7.03	— .019	1.90	+ .128	6.94
2	Artisans' tools	78	87			78	87	1,810	1,806			1,810	1,806	— .004	2.21			— .004	.22
3	Bakeries	279	267	49	53	328	320	1,922	1,967	.919	.917	1,773	1,793	+ .045	2.34	— .002	.22	+ .020	1.13
4	Beef and pork packing	1,373	1,456	18	25	1,391	1,481	1,799	1,852	1,023	1,000	1,788	1,838	+ .053	2.95	— .003	.29	+ .049	2.74
5	Blank books and stationery	109	123	184	134	293	257	1,644	1,825	.705	.768	1,055	1,274	+ .181	11.01	+ .063	8.93	+ .219	20.76
6	Boilers and tanks	653	701			653	701	1,998	1,969			1,998	1,969	— .029	1.45			— .029	1.45
7	Boots and shoes	1,522	1,541	879	928	2,401	2,489	1,690	1,641	1,035	.991	1,450	1,397	— .049	2.90	— .044	4.25	— .053	5.66
8	Boxes (packing)	957	974	9	15	966	989	1,374	1,403	.767	.700	1,369	1,392	+ .029	2.11	— .067	8.74	+ .023	1.68
9	Boxes (paper and cigar)	364	329	480	467	844	796	1,489	1,447	.754	.824	1,028	1,083	+ .058	4.17	+ .070	9.28	+ .055	5.25
10	Brass and copper goods	1,063	1,219	64	37	1,127	1,256	1,818	1,845	.921	1,033	1,767	1,821	+ .027	1.48	+ .112	12.16	+ .054	2.82
11	Brick and tile	613	514			613	515	1,607	1,682		.850	1,607	1,681	+ .075	4.04			+ .074	4.66
12	Brooms and brushes	71	63	3	2	74	65	1,199	1,313	.917	.758	1,187	1,295	+ .114	9.51	— .167	18.21	+ .108	9.09
13	Chairs.	2,647	2,742	224	249	2,871	2,991	1,305	1,335	.653	.680	1,255	1,281	+ .030	2.30	+ .027	4.13	+ .026	2.07
14	Cigars	520	479	263	293	788	772	1,891	1,841	.882	1,080	1,548	1,544	— .004	2.64	+ .178	20.18	— .004	.22
15	Clothing	536	490	1,305	1,392	2,041	1,882	1,932	2,161	1,009	1,002	1,252	1,304	+ .229	11.85	— .007	.69	+ .052	4.07
16	Confectionery	342	368	721	753	1,063	1,121	1,410	1,363	.622	.658	.876	.889	— .047	3.34	+ .038	6.12	+ .013	1.48
17	Coopeage	522	499			522	501	1,966	2,059		.600	1,965	2,053	+ .093	4.73			+ .087	4.43
18	Cotton and linen goods	375	354	645	607	1,020	961	1,372	1,478	.873	.896	1,059	1,111	+ .106	7.73	+ .023	2.63	— .032	4.91
19	Creameries	101	101			101	101	1,687	1,813			1,687	1,813	+ .126	7.59			+ .126	7.59
20	Dyeing and cleaning	65	85	110	111	175	196	1,625	1,659	.869	.853	1,150	1,208	+ .034	2.09	— .016	1.84	+ .058	5.04
21	Electric and gas supplies	311	328	29	26	340	354	1,869	1,914	.747	.792	1,773	1,832	+ .045	2.41	+ .045	6.22	+ .059	3.33
22	Excelsior	110	127	66	6	176	133	1,490	1,530	.658	.650	1,178	1,490	+ .040	2.68	— .009	1.37	+ .312	28.48
23	Fancy articles	298	318	158	186	456	504	1,784	1,675	.697	.730	1,410	1,326	+ .113	6.31	+ .033	4.73	+ .084	5.96
24	Flour and feed	716	685	3	2	719	687	1,824	1,844	1,390	1,390	1,822	1,841	+ .021	1.10	— .890	64.01	+ .019	1.04
25	Food preparations	1,472	1,652	552	843	2,024	2,495	1,553	1,516	.889	.866	1,372	1,296	— .037	2.38	— .023	2.59	— .076	5.54
26	Furniture	3,518	3,365	101	108	3,619	3,473	1,477	1,517	.933	.905	1,462	1,497	+ .040	5.71	— .028	3.00	+ .035	2.39
27	Furs, gloves and mittens	348	417	620	679	968	1,096	1,977	1,877	1,080	.985	1,402	1,324	— .100	2.06	— .095	8.80	— .078	5.56
28	Iron	4,740	5,504		46	4,740	5,500	1,847	1,962		.800	1,847	1,952	+ .115	6.23			+ .105	5.68
29	Knit goods	568	563	2,289	2,358	2,857	2,921	1,656	1,653	.889	.887	1,041	1,035	— .003	1.18	— .002	.23	+ .006	5.58

31	Lime and cement	696	650	3	3	692	653	1,573	1,727	583	583	1,568	1,717	+ .154	9.79	.....	.....	+ .149	9.50
32	Lumber	11,377	11,177	121	130	11,498	11,307	1,771	1,807	835	843	1,761	1,791	+ .036	2.03	+ .008	.....	+ .035	1.99
33	Machinery	6,481	7,017	32	55	6,513	7,072	2,076	2,061	1,061	946	2,071	2,082	+ .015	7.32	+ .115	10.84	+ .011	5.53
34	Malt	307	340	7	.....	314	310	1,986	2,038	867	.....	1,961	2,038	+ .048	2.42	.....	.....	+ .730	3.72
35	Malt liquors	2,518	2,753	246	367	2,764	3,120	1,969	1,942	757	746	1,861	1,801	- .027	1.37	- .011	1.45	- .060	3.22
36	Office and store fixtures	1,085	1,051	.....	1	1,085	1,052	1,776	1,811	.....	830	1,776	1,810	+ .035	1.97	.....	.....	+ .034	1.91
37	Paper and pulp	3,180	3,076	63	621	3,814	3,700	1,674	1,711	922	914	1,519	1,577	+ .037	2.21	+ .008	.....	+ .028	1.81
38	Saddle y	244	2 8	149	11	393	379	1,816	1,817	819	970	1,449	1,539	+ .001	.....	+ .121	14.25	+ .120	8.28
39	Sash, doors, etc	2,498	2,626	.....	7	2,498	2,633	1,611	1,647	.....	914	1,611	1,643	+ .036	2.23	.....	.....	+ .034	2.11
40	Sheet metal	1,839	1,890	576	590	2,445	2,480	1,488	1,527	700	704	1,332	1,331	+ .001	2.62	+ .004	.....	+ .029	2.23
41	Ships and dry docks	673	924	.....	12	673	936	2,098	2,115	.....	1,000	2,096	2,101	+ .019	.....	.....	.....	+ .005	.....
42	Soap and grease	54	61	43	25	102	85	1,916	1,814	793	692	1,443	1,493	+ .102	5.32	+ .101	12.74	+ .050	3.46
43	Sash	105	105	2	3	107	108	1,995	2,009	1,175	1,500	1,980	1,995	+ .014	7.30	+ .325	27.66	+ .015	7.76
44	Staves and headings	292	308	.....	.....	292	308	1,629	1,533	.....	.....	1,629	1,533	+ .076	4.67	.....	.....	+ .073	4.67
45	Stone	1,164	763	.....	1	1,164	764	2,204	2,417	.....	1,200	2,204	2,416	+ .208	9.44	.....	.....	+ .212	9.62
46	Structural iron	513	561	14	17	567	578	1,738	1,998	678	662	1,710	1,960	+ .260	14.96	+ .016	2.36	+ .250	14.62
47	Trunks and valises	318	303	104	118	422	421	1,649	1,720	762	792	1,431	1,460	+ .071	4.31	+ .030	3.94	+ .029	2.03
48	Wagon	2,538	2,787	32	31	2,600	2,818	1,850	1,889	1,082	1,088	1,811	1,880	+ .039	2.11	+ .006	.....	+ .039	2.12
49	Wood-ware	1,035	1,031	.....	.....	1,095	1,031	1,612	1,634	.....	.....	1,642	1,654	+ .012	.....	.....	.....	+ .012	7.73
50	Woolen mills	37	300	433	423	760	723	1,521	1,517	891	861	1,162	1,133	+ .004	.....	+ .030	3.37	+ .029	2.58
51	Miscellaneous	1,784	1,880	597	674	2,381	2,554	1,986	2,046	982	969	1,734	1,762	+ .060	3.02	+ .013	1.32	+ .028	1.61
Total and average		70,470	73,340	12,271	12,916	82,744	81,256	1,762	1,807	885	883	1,632	1,639	+ .045	2.61	+ .002	.....	+ .037	2.27

(2) SUMMARY OF 11 INDUSTRIES—415 ESTABLISHMENTS.

1	Beverages	308	288	2	2	310	290	1,582	1,612	1,175	1,125	1,579	1,609	+ .030	1.89	+ .050	4.26	+ .030	1.90
2	Chemicals	72	75	23	21	95	96	1,729	1,634	900	890	1,528	1,474	+ .085	5.49	+ .010	1.11	+ .057	3.73
3	Coal and wood	1,752	1,742	.....	.....	1,752	1,742	2,290	2,273	.....	.....	2,280	2,275	+ .007	.....	.....	.....	+ .007	.....
4	Contractors	1,033	1,006	4	1	1,037	1,007	2,358	2,425	825	830	2,352	2,424	+ .067	2.84	+ .005	.....	+ .07	3.06
5	Elevators	234	179	1	1	235	180	2,069	2,045	1,500	1,750	2,067	2,013	+ .024	1.16	+ .250	16.67	+ .024	1.16
6	Laundries	133	137	570	570	703	707	1,991	1,962	989	1,006	1,179	1,192	+ .029	1.45	+ .017	1.72	+ .013	1.10
7	Light, water and power	1,185	1,235	1	3	1,186	1,208	1,924	1,870	830	800	1,922	1,897	+ .053	2.76	+ .030	3.61	+ .055	2.85
8	Lithographic and engraving	509	536	110	103	619	639	2,178	2,225	615	699	1,906	1,979	+ .047	2.16	+ .054	8.37	+ .073	3.83
9	Printing and publishing	1,016	1,034	182	198	1,198	1,232	1,822	1,853	1,000	1,016	1,697	1,719	+ .031	1.71	+ .016	1.60	+ .022	1.30
10	Tobacco warehouses	753	679	1,127	1,155	1,877	1,834	1,331	1,488	776	1,047	1,106	1,210	+ .157	11.80	+ .291	38.49	+ .101	9.40
11	Miscellaneous	329	285	124	20	453	305	2,033	2,015	942	933	1,734	1,947	+ .018	.....	+ .051	5.41	+ .213	1.23
Total and average		7,321	7,166	2,144	2,074	9,465	9,240	2,007	2,033	952	1,013	1,769	1,804	+ .026	1.30	+ .061	6.41	+ .035	1.98

(3) SUMMARY OF 62 INDUSTRIES—1,513 ESTABLISHMENTS.

Total and average of 62 industries, 1,513 establishments		77,794	80,506	14,415	14,990	92,209	95,496	1,785	1,829	895	901	1,646	1,682	+ .044	2.46	+ .006	0.67	+ .036	2.19
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Remarks.—A few facts of those presented in the summary tables are of considerable interest. Of the 1513 establishments from which reports were received, 23 which were under private control at the beginning of 1905 were organized as corporations during the year, and reported as such in 1906. The average number of days of operation, 298 in 1904 and 300 in 1905, was somewhat less than the usual number of working days in a year. The increase of over $6\frac{1}{2}$ per cent in the average number of persons employed gives evidence of a substantial improvement in industrial conditions within the state.

For the 62 industries as a whole, employment was very regular each year. The average unemployment was only 3 per cent in 1904 and 4 per cent in 1905. But it should be noted that there was an almost uniform increase from month to month in 1905 in the number of persons employed, with the maximum number in November. The percentage of unemployment in any month of that year represents in reality therefore not the proportion of persons idle in that month, but rather the natural increase in the total number of wage-earners in the state that occurred between that month and November. Apparently there was very little actual idleness on the part of employees in that year.

The facts presented in Table C require little comment. The average daily wages of all employees experienced a moderate gain in 1905—slightly over 2 per cent. The increase in the wages of male employees was nearly $2\frac{1}{2}$ per cent; of female employees, only 2-3 of 1 per cent. Of the 62 industries, 43 paid higher average wages to their male employees in 1905 than in the preceding year; the remaining 19, lower wages. Only 32 paid higher average wages to their female employees, as against 25 that paid a lower average. In one industry the same wages were paid as in 1904. In 6, no female help was employed in either year. Seven gave employment to women in 1905, which had not the preceding year. Only one employed women in 1904 and not in 1905. In 47 industries the average wages of all employees were higher in 1905, as opposed to 15 in which lower average wages were paid. Contractors paid the highest average daily wages received by male employees—\$2.36 in 1904 and \$2.43 in 1905. The industry designated as Furs, Gloves and Mittens paid the highest average daily wages received by female employees in 1904—\$1.08. In the cigar industry, females were

paid the highest wages they received in 1905—\$1.06. This is however exclusive of those industries in which only a very small percentage of the employees were women.

The average hours of labor for men increased from 9.91 per day in 1904 to 9.92 in 1905. The hours of women, from 9.64 per day to 9.71. The hours of all employees, from 9.87 to 9.89. There was therefore no marked change in the average hours of either male or female employees in the period covered by this report. It is worthy of notice however that the increase in the average hours of women, although less than $\frac{3}{4}$ of 1 per cent, was nevertheless sufficient to counterbalance the slight increase in their average daily wages; so that their hourly wages were very slightly lower in 1905 than in 1904.

SUPPLEMENTARY TABLES.

The following tables are based upon returns from all establishments that reported in 1905. Of the 2382 establishments reporting in that year, 1513 have already been covered in the preceding tables. Of the additional 869, 621 were engaged in the leading industries, 248 in the minor. The manufacture of cheese has been included among the leading industries, thereby increasing the number to 52. In like manner, the manufacture of patent medicines has been included among the minor industries, increasing the number of these to 12.

TABLE I—MANAGEMENT AND OPERATION, 1905.

Classification.	For 52 leading industries— 1,719 establishments.	For 12 minor industries— 663 establishments.	Total, 64 industries— 2,382 establishments.
Number of private firms	762	392	1,154
Number of male partners	1,147	564	1,711
Number of female partners	102	20	122
Total number of partners	1,249	584	1,833
Number of corporations	957	271	1,228
Number of male stockholders	16,690	2,649	19,339
Number of female stockholders	2,439	505	2,944
Total number of stockholders	19,129	3,154	22,283
Total number of partners and stockholders	20,378	3,738	24,116
Smallest number of persons employed	81,292	9,583	90,878
Greatest number of persons employed	91,190	10,733	101,923
Average number of persons employed	87,821	10,081	97,902
Average days in operation	282	313	290

TABLE II.—INVESTMENT, 1905. SHOWING AMOUNT OF CAPITAL INVESTED IN EACH OF SEVERAL ITEMS, ALSO WHAT PER CENT EACH OF THESE AMOUNTS IS OF THE TOTAL CAPITAL INVESTED. BASED UPON RETURNS FROM THE 52 LEADING INDUSTRIES ONLY.

Number.	Industries.	Amount invested in					Per cent. invested in				
		Land.	Buildings and fixtures.	Machinery, etc.	Cash and other capital.	Total.	Land.	Buildings and fixtures.	Machinery, etc.	Cash and other capital.	Total.
1	Agricultural implements.....	\$971,450 95	\$1,982,988 58	\$1,815,239 15	\$12,989,317 45	\$17,759,096 13	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.
2	Artisans' tools.....	25,250 00	26,800 00	44,032 88	53,853 58	149,946 46	5.47	11.17	10.22	73.14	100.00
3	Bakeries.....	107,700 00	202,987 41	109,005 28	103,280 09	522,972 78	16.84	17.87	29.37	35.92	100.00
4	Beef and pork packing.....	299,250 00	595,177 53	608,817 55	2,639,627 09	4,142,872 17	20.59	38.82	26.84	19.75	100.00
5	Blank-books and stationery.....	3,550 00	15,031 00	91,372 50	207,704 80	317,658 30	7.22	14.37	14.70	63.71	100.00
6	Boilers and tanks.....	125,836 76	146,211 91	473,927 63	340,271 87	1,086,248 17	1.12	4.73	28.76	65.39	100.00
7	Boots and shoes.....	64,501 20	381,801 83	411,249 95	1,825,015 94	2,682,563 92	11.59	13.46	43.63	31.32	100.00
8	Boxes (packing).....	171,985 10	114,776 61	214,606 44	625,647 27	1,127,015 42	2.41	14.23	15.33	68.03	100.00
9	Boxes (paper and cigar).....	117,797 51	205,164 19	212,707 38	494,111 55	1,029,780 63	15.26	10.18	19.04	55.52	100.00
10	Brass and copper goods.....	300,212 59	582,669 02	598,005 56	1,653,877 65	3,134,764 82	11.44	19.92	20.66	47.98	100.00
11	Brick and tile.....	225,678 66	262,955 72	467,630 06	219,654 64	1,175,902 08	9.58	18.59	19.07	52.76	100.00
12	Brooms and brushes.....	9,400 00	30,458 88	39,624 09	102,127 81	181,610 78	19.19	22.37	39.76	18.68	100.00
13	Chairs.....	394,556 72	600,970 49	746,707 71	1,332,027 07	3,074,261 99	5.18	16.77	21.82	56.23	100.00
14	Cheese.....	22,465 00	72,900 00	27,427 00	12,900 00	135,682 00	12.83	19.55	24.29	43.33	100.00
15	Cigars.....	70,500 00	123,027 11	107,059 51	518,394 01	818,980 63	16.56	53.72	20.21	9.51	100.00
16	Clothing.....	228,832 64	429,162 99	225,501 88	1,947,980 46	2,831,477 97	8.61	15.02	13.07	63.30	100.00
17	Confectionery.....	81,512 28	209,157 59	249,653 32	790,823 64	1,831,146 83	8.08	15.16	7.96	68.80	100.00
18	Copperage.....	168,247 26	203,006 18	93,365 72	467,647 07	932,266 23	6.12	15.71	18.76	59.41	100.00
19	Cotton and linen.....	176,569 54	248,964 22	440,946 91	1,172,357 81	2,038,838 48	18.05	21.78	10.01	50.16	100.00
20	Creameries.....	35,970 00	280,230 33	226,540 98	196,023 48	738,764 79	8.06	12.21	21.63	57.50	100.00
21	Dyeing and cleaning.....	21,400 00	40,768 74	75,267 97	39,304 43	176,741 14	4.87	37.93	30.67	26.53	100.00
22	Electric and gas supplies.....	47,900 00	131,020 22	228,439 71	695,323 27	1,102,683 20	12.11	23.07	42.58	22.24	100.00
23	Excelsior.....	35,558 70	45,871 57	94,445 00	102,242 41	278,117 68	4.34	11.88	20.72	63.06	100.00
24	Fancy articles.....	10,098 00	40,002 00	100,649 00	200,511 32	351,230 32	17.79	16.49	33.96	36.76	100.00
25	Flour and feed.....	693,030 65	1,495,242 59	1,663,971 76	2,733,489 26	6,605,734 26	2.88	11.39	28.65	57.08	100.00
26	Food preparations.....	235,607 20	668,125 49	636,326 25	1,422,095 15	2,962,154 09	10.49	22.64	25.19	41.68	100.00
27	Furniture.....	479,539 27	929,935 78	1,013,232 33	2,474,704 33	4,897,411 71	7.95	22.56	21.48	48.01	100.00
28	Furs, gloves and mittens.....	16,300 00	61,382 81	129,929 11	889,534 69	1,097,146 76	9.79	18.99	20.69	50.53	100.00
29	Iron.....	865,995 49	1,463,754 65	1,526,277 11	3,329,390 94	7,185,013 19	1.49	5.59	11.84	81.08	100.00
30	Knit goods.....	127,730 75	399,598 49	928,146 65	1,323,951 82	2,779,427 71	12.05	20.37	21.24	46.34	100.00
							4.59	14.38	33.39	47.64	100.00

31	Leather	961,434 88	1,848,553 43	1,469,034 72	9,102,181 08	13,381,154 11	7.18	13.82	10 98	68.02	100.00
32	Lime and cement	854,070 82	582,212 96	320,832 14	275,067 75	2,032,188 66	42.03	28.65	15.79	13.53	100.00
33	Lumber	6,873,307 85	2,164,064 94	2,548,236 30	12,859,751 14	24,441,300 23	28.12	8.84	10.43	52.61	100.00
34	Machinery	755,983 96	2,471,986 92	4,336,776 47	7,537,162 80	15,101,910 15	5.00	16.37	28.72	49.91	100.00
35	Malt	477,896 03	1,973,572 87	929,519 63	2,017,621 08	3,398,609 63	8.85	36.56	17.22	37.37	100.00
36	Malt liquors	8,490,559 27	6,132,700 95	4,521,704 35	15,008,940 26	34,153,904 83	24.86	17.93	13.24	43.94	100.00
37	Office and store fixtures	163,738 11	362,539 29	300,100 88	7-7,534 01	10,593,913 29	10 27	22.75	18.83	48.15	100.00
38	Paper and pulp	1,436,162 86	2,804,110 19	4,775,644 02	2,825,587 16	11,841,504 23	12.13	23.68	40.33	23.86	100.00
39	Saddlery	8,850 00	21,153 00	25,311 48	144,791 71	203,103 20	4.42	10.57	12.65	72.36	100.00
40	Sash, doors, etc.	507,618 39	625,703 07	678,656 01	2,211,246 03	4,023,283 50	12.62	15.55	16.87	54.96	100.00
41	Sheet metal	222,875 00	435,666 66	534,267 55	2,265,233 36	3,458,042 57	6 44	12.60	15.45	65.51	100.00
42	Ships and dry docks	826,489 08	614,402 34	682,667 91	401,919 67	2,555,479 00	32.24	25.22	26.71	15.73	100.00
43	Soap and grease	10,000 00	11,000 00	37,009 25	122,111 19	180,120 44	5.55	6.11	20.55	67.79	100.00
44	Starch	12,800 00	61,500 00	64,000 00	19,253 98	157,553 98	8.12	39.04	40.62	12.22	100.00
45	Staves and headings	34,700 00	31,500 00	45,750 00	145 649 50	257,599 50	13.47	12.23	17.76	56.54	100.00
46	Stone	782,723 73	528,761 11	537,203 61	643,105 04	2,491,793 49	31.41	21.22	21.56	25.81	100.00
47	Structural iron	177,399 38	322,570 34	540,504 58	768,427 75	1,808,902 05	9.81	17.83	29.88	42.48	100.00
48	Trunks and valises	49,000 00	86,320 00	65,700 50	460,634 40	661,654 90	7.40	13.05	9.93	69.62	100.00
49	Wagons	429,752 28	948,876 06	578,179 80	4,523,336 42	6,480,144 56	6.64	14.64	8.92	69.80	100.00
50	Woodenware	78,625 00	155,382 00	95,431 55	295,814 80	625,253 35	12.58	24.85	15.26	47.31	100.00
51	Woolen goods	93,425 00	181,493 59	391,808 49	619,669 21	1,256,396 29	7.26	14.11	30.46	48 17	100.00
52	Miscellaneous	876,346 67	1,093,721 59	1,363,343 88	3,295,000 15	6,631,462 29	13 22	16.54	20.54	49.70	100.00
	Total	\$30,257,894 60	\$35,476,922 24	\$38,441,772 67	\$107,233,289 39	\$211,409,888 90	14.31	16.78	18.18	50.73	100.00

TABLE IIIA.—VALUE OF MATERIALS AND LABOR EMPLOYED, AND OF PRODUCT, 1905.
SHOWING ALSO WHAT PER CENT EACH ITEM IS OF THE VALUE OF THE PRODUCT. BASED UPON REPORTS FROM THE 52 LEADING INDUSTRIES ONLY.

Number.	Industries.	Value of					Per cent of value of product.						
		Raw material used.	Other material used.	Wages paid.	Salaries paid.	Profit and minor expenses.	Goods made and work done.	Raw material used	Other material used	Wages paid.	Salaries paid.	Profit and minor expenses.	Goods made and work done.
							Prct.	Prct.	Prct.	Prct.	Prct.	Prct.	
1	Agricultural implements	\$2,962,065 01	\$363,417 23	\$1,818,750 26	\$1,026,896 20	\$4,435,540 59	\$10,609,669 34	27.92	3.45	17.14	9.68	41.81	100.00
2	Artisans' tools	45,400 00	17,231 00	50,225 96	29,792 50	50,229 54	192,901 00	23.53	8.95	26.04	15.44	26.04	100.00
3	Bakeries	572,659 17	99,272 10	197,214 49	53,754 17	335,616 16	1,158,596 09	49.43	8.57	17.02	4.64	20.34	100.00
4	Beef and pork packing	12,889,841 5	559,104 77	696,183 05	180,055 44	923,690 98	15,248,878 76	84.5	3.67	4.56	1.18	6.06	100.00
5	Blank-books and stationery	218,163 95	61,843 27	149,228 35	40,921 28	86,573 71	556,727 56	39.11	11.11	26.81	7.35	15.55	100.00
6	Boilers and tanks	820,664 78	98,297 27	371,532 87	74,842 40	301,885 95	1,670,223 27	49.13	5.89	22.25	4.48	18.25	100.00
7	Boots and shoes	3,130,188 06	251,324 38	943,172 54	213,183 69	403,351 65	4,941,229 32	63.35	5.09	19.09	4.31	8.16	100.00
8	Boxes (packing)	1,013,304 14	9,031 33	359,011 13	48,000 77	330,580 34	1,843,977 71	54.95	5.05	19.47	2.60	17.93	100.00
9	Boxes (paper and cigar)	709,325 59	47,972 73	271,775 59	64,358 13	151,464 31	1,244,894 41	56.98	3.85	21.83	5.17	12.17	100.00
10	Brass and copper goods	1,255,089 56	236,567 40	699,491 41	229,394 82	577,496 58	2,998,939 77	41.87	7.89	23.33	7.65	19.26	100.00
11	Brick and tile	94,580 67	128,557 10	272,115 11	49,937 90	142,372 77	687,563 55	13.75	18.70	39.58	7.26	20.71	100.00
12	Brooms and brushes	91,988 47	12,027 48	48,200 92	21,518 53	45,524 74	219,260 19	41.95	5.49	21.98	9.82	29.76	100.00
13	Chairs	1,287,290 32	169,647 98	1,061,169 92	151,736 53	506,777 98	3,179,622 76	40.49	5.33	33.37	4.87	15.94	100.00
14	Cheese	47,387 05	21,157 19	19,111 75	4,632 00	32,036 96	544,324 95	81.86	3.89	3.51	0.85	5.89	100.00
15	Cigars	560,408 93	89,841 10	380,339 61	94,771 75	447,629 11	1,572,963 50	35.63	5.11	24.18	6.02	28.46	100.00
16	Clothing	2,870,285 43	126,911 43	820,893 51	238,148 06	902,430 29	5,038,668 72	57.31	2.53	16.39	5.75	18.02	100.00
17	Confectionery	1,528,356 70	137,759 42	293,149 82	248,303 65	300,651 25	2,498,226 84	61.18	5.52	11.73	9.54	12.03	100.00
18	Cooperage	575,865 76	27,559 78	265,224 57	40,253 37	117,409 21	1,026,312 69	56.11	2.69	25.84	3.92	11.44	100.00
19	Cotton and linen	1,822,691 12	178,458 59	278,731 87	105,898 65	330,810 77	2,716,593 00	67.09	6.57	10.26	3.90	12.18	100.00
20	Creameries	3,339,476 82	176,433 27	167,720 11	39,569 30	379,140 45	4,132,339 95	81.54	4.27	4.06	0.96	9.17	100.00
21	Dyeing and cleaning	34,211 74	42,911 14	81,425 56	28,610 66	55,814 72	242,963 82	14.08	17.66	33.52	11.77	22.97	100.00
22	Electric and gas supplies	551,721 58	66,749 95	209,782 23	153,309 41	165,922 89	1,147,486 18	48.08	5.82	18.22	13.36	14.46	100.00
23	Excelsior	145,714 15	7,152 74	46,383 34	15,910 00	111,07 53	327,182 81	44.54	2.19	14.18	5.16	33.93	100.00
24	Fancy articles	270,004 66	31,897 95	164,008 06	41,402 26	114,487 46	621,770 39	43.42	5.13	26.38	6.66	18.41	100.00
25	Flour and feed	15,827,086 52	857,525 16	517,520 40	212,000 68	1,559,099 60	18,973,232 36	83.42	4.52	2.73	1.11	8.22	100.00

26	Food preparations	1,353,187 63	1,023,289 95	489,991 44	217,960 71	1,800,647 98	4,891,077 71	27.73	20.98	10.02	4.46	36.81	100.00
27	Furniture	2,141,483 96	392,095 01	1,402,618 2	332,140 60	973,835 75	5,212,174 55	41.09	7.52	26.91	5.80	18.68	101.00
28	Furs, gloves and mittens	1,474,861 90	118,430 48	419,350 19	118,980 89	197,537 80	2,329,161 25	63.32	5.09	18.00	5.11	8.48	100.00
29	Iron	8,884,220 00	1,225,907 92	2,958,670 50	374,059 05	2,914,183 11	16,856,040 58	54.32	7.49	18.09	2.28	17.82	100.00
30	Knit goods	2,034,585 33	370,901 75	967,497 63	196,068 29	488,947 49	4,056,000 49	50.16	9.14	23.85	4.84	12.01	100.00
31	Leather	16,027,370 35	2,228,752 31	2,236,834 74	299,754 24	2,348,468 57	23,141,210 21	69.26	9.63	9.66	1.30	10.17	100.00
32	Lime and cement	403,796 33	59,764 60	301,305 60	49,110 92	156,670 32	970,647 77	41.60	6.16	31.04	5.06	16.14	100.00
33	Lumber	10,773,037 16	751,923 56	5,184,180 26	695,381 86	4,604,645 04	22,009,137 88	48.95	3.42	23.55	3.16	20.92	100.00
34	Machinery	6,470,409 33	700,774 80	4,316,137 18	890,539 91	3,339,069 75	15,746,930 96	41.09	4.45	27.60	5.66	21.20	100.00
35	Malt	4,831,781 91	268,512 60	233,936 61	95,607 67	2,231,005 19	7,669,843 97	63.07	3.51	3.05	1.25	29.12	100.00
36	Malt liquors	4,314,314 74	1,590,195 44	1,941,200 98	744,266 81	11,281,778 28	19,871,735 28	21.71	8.03	9.77	3.75	56.77	100.00
37	Office and store fixtures	539,226 77	140,552 65	510,751 03	116,344 39	303,173 58	1,680,038 42	35.49	8.47	30.77	7.01	18.26	100.00
38	Paper and Pulp	6,990,766 70	1,787,177 22	1,912,453 96	287,492 74	1,460,919 61	12,428,810 23	56.17	14.38	15.39	2.31	11.75	100.00
39	Saddlery	495,472 02	127,355 80	153,724 11	36,954 00	89,389 49	902,895 42	54.87	14.11	17.03	4.09	9.90	100.00
40	Sash, doors, etc.	3,073,678 58	254,465 42	1,256,555 86	264,576 61	1,178,697 87	6,027,974 34	50.99	4.22	20.85	4.39	19.55	100.00
41	Sheet metal	2,781,506 46	316,130 74	932,241 33	255,247 91	483,329 23	4,768,475 67	58.33	6.63	19.55	5.35	10.14	100.00
42	Ships and dry docks	291,506 53	55,653 05	471,530 61	33,539 71	1,279,311	1,035,024 21	28.16	5.38	45.56	3.24	17.61	100.00
43	Soap and grease	296,638 68	7,400 00	38,603 60	48,767 13	57,690 82	449,120 23	66.05	1.65	8.59	10.86	12.85	100.00
44	Starch	128,805 88	23,737 79	251,180 66	2,677 30	47,237 70	227,639 33	56.59	10.43	11.06	1.17	20.75	100.00
45	Staves and headings	122,831 41	8,313 21	99,131 14	13,497 00	36,541 87	280,314 63	43.82	2.97	35.36	4.81	13.04	100.00
46	Stone	565,674 80	178,788 44	687,633 22	112,702 71	248,036 86	1,792,888 03	31.55	9.97	38.35	6.29	13.84	100.00
47	Structural iron	1,878,626 71	120,813 51	484,282 11	170,302 03	351,922 44	3,008,946 80	62.44	4.01	16.09	5.66	11.80	100.00
48	Trunks and valises	452,680 00	6,425 00	168,367 48	84,750 00	163,527 52	875,750 00	51.69	0.73	19.23	9.68	18.67	100.00
49	Wagons	3,419,742 77	334,272 55	1,449,500 73	311,312 02	1,265,530 12	6,740,398 24	50.45	4.93	21.38	4.59	18.67	100.00
50	Woodenware	710,785 77	59,981 91	430,074 74	41,272 12	309,052 82	1,551,167 36	45.82	3.87	27.73	2.65	19.92	100.00
51	Woolen goods	993,444 88	117,625 10	264,806 92	63,845 00	255,285 51	1,691,007 41	58.61	6.94	15.62	3.77	15.06	100.00
52	Miscellaneous	3,744,374 74	536,553 41	1,503,968 53	400,080 02	1,382,251 66	7,567,233 39	49.48	7.09	19.87	5.29	18.27	100.00
	Total	\$133,351,572 03	\$16,714,537 03	\$41,052,908 95	\$9,677,419 96	\$50,863,831 34	\$236,660,269 31	53.90	6.51	16.00	3.77	19.82	100.00

MANUFACTURING RETURNS, 1904-1905.

TABLE III B—ANALYSIS OF TABLE III A.—BASED UPON REPORTS FROM THE 53 LEADING INDUSTRIES ONLY.

Classification.	1905.
Value of goods made and work done (gross product).....	\$256,690,269 31
Value of stock used and other material consumed in production...	155,066,100 06
Industry product (gross product less value of stock and material).	101,594,169 25
Wages and salaries (Labor's direct share of product)	50,730,328 91
Profit and minor expense fund (industry product less wages).....	50,833,831 34
	Per cent.
Percentage of industry product paid in wages	49.93
Percentage of industry product devoted to profit and minor ex- penses	50.07

TABLE IV—AVERAGE CAPITAL, ETC., PER EMPLOYEE.—BASED UPON REPORTS FROM THE 53 LEADING INDUSTRIES ONLY.

Classification.	1905.
Average capital per employee	\$2,407 37
Average product per employee	2,922 54
Average yearly earnings	467 58

TABLE V—RANGE OF EMPLOYMENT AND OF UNEMPLOYMENT, 1905.

Months.	For 52 leading industries.			For 12 minor industries.			For 64 industries.		
	Number of persons employed.	Per cent. of		Number of persons employed.	Per cent. of		Number of persons employed.	Per cent. of	
		Employment.	Unemployment.		Employment.	Unemployment.		Employment.	Unemployment.
January	81,392	89.15	10.85	9,585	89.31	10.69	90,878	89.72	10.28
February	81,878	89.79	10.21	10,252	95.52	4.48	92,130	90.93	9.04
March	85,047	93.27	6.73	10,343	96.37	3.63	95,390	94.18	5.82
April	86,243	94.53	5.47	10,733	100.00	.....	96,976	95.75	4.25
May	88,124	95.64	4.36	10,365	95.37	4.63	98,489	97.24	2.76
June	88,764	97.34	2.66	9,980	92.98	7.02	98,744	97.50	2.50
July	89,732	98.40	1.60	9,921	92.43	7.57	99,653	98.39	1.61
August	91,187	99.59	0.41	9,958	92.78	7.22	101,145	99.87	0.13
September	91,190	100.00	.....	9,998	93.15	6.85	101,181	99.91	0.09
October	90,804	99.58	0.42	10,003	93.19	6.81	100,807	99.53	0.47
November	91,164	99.97	0.03	10,117	94.23	5.77	101,281	100.00	.....
December	88,428	95.97	4.03	9,710	90.47	9.53	98,138	96.66	3.34
Average	87,821	96.31	3.69	10,081	93.92	6.08	97,902	96.66	3.34

Remarks.—It will be noted that no marked difference exists between the averages presented in the supplementary tables and those obtained for the 1513 establishments previously tabulated. The average number of days of operation for 1905 is reduced however to 290, for the 2382 establishments, as against an average of 300 days for the 1513 establishments. There is a slight increase in the average capital and the average product per employee, and a slight decrease in the average yearly earnings of each. Tables II and III A are of interest, as showing the percentage of capital invested in each industry in land, buildings, etc., respectively; and the percentage which the value of the raw material used, of the wages paid, etc., is of the value of the product manufactured. From Table II it is seen that the capital invested in land averages about 14 per cent of the total capital invested; in buildings and fixtures, 17 per cent; in machinery, 18 per cent; while the cash capital needed for the conduct of the business averages over 50 per cent of the total. From Table IIIA it is seen that the value of the materials used constitutes on the average about 60 per cent of the value of the finished product; 20 per cent is paid in wages and salaries, and 20 per cent is devoted to the "profit and minor expense fund." It will be noted however that there are very wide variations from these averages in the case of many of the industries.

CONCLUSION.

Advantages offered by Wisconsin to manufacturing industries.— According to the United States census of 1900, Wisconsin ranked ninth in that year among the states in the total value of its manufactured product. It ranked first in the value of its lumber and timber products, second in dairy products, third in malt; fourth in agricultural implements, in leather products, and in malt liquors; fifth in paper and wood pulp, sixth in planing mill products; seventh in carriages and wagons and in foundry and machine shop products; and eighth in men's factory-made clothing, in flour and feed, and in factory-made furniture. This prominence as a manufacturing state is due primarily to four causes: an abundance of raw materials, a large available water power, a favorable location geographically, and excellent transportation facilities.

The forests of Wisconsin have for years furnished the most important of the raw materials. The lumber industry is naturally the one most directly dependent upon this material. But the products of the lumber industry furnish in turn part or all of the materials for many of the most important of the other industries of the state. Prominently among these may be mentioned the manufacture of sash doors and other planing mill products, carriages and wagons, railway cars, boats, agricultural implements, furniture, staves and headings, packing and cigar boxes, wooden-ware, excelsior, paper and pulp. Tanbark also is furnished to the tanning industry. From the great diversity of the farming products of the state result such industries as the manufacture of malt and malt liquors, flour and feed, food preparations, starch, butter and cheese, woolen goods, cigars and tobacco; the packing of beef and pork; the tanning of leather, and the consequent use of the product in the manufacture of boots and shoes, harness and other saddlery goods, gloves, mittens, and valises. Of the mineral resources of the state, granite, sandstone, and rhyolite are manufactured into monuments, building stone and paving blocks, respectively. Limestone is used both as building stone, and as a flux in the manufacture of iron. Large quantities also are used for the manufacture of lime. Sand for use in iron moulding is present in abundance in the state. The existence of large deposits of excellent clay has given considerable importance to the manufacture of brick and tile. Although but little iron is mined within the state, immense quantities of the ore are mined just beyond its borders, and are reduced to a marketable form in this state. The product resulting from the general iron and steel industry furnishes a part or all of the materials for such industries as the manufacture of machinery, agricultural implements, artisans' tools, sheet metal, boilers, tanks, and architectural ironwork.

The total amount of water power in Wisconsin already developed is about 99,000 horsepower. Nearly \$20,000,000 is therefore saved to the manufacturers of the state each year, if the annual cost of one h. p., furnished by steam by means of the combustion of coal, be considered as \$20.

The rivers which together with their tributaries furnish the greater part of the power already utilized are the Fox, Wisconsin, Chippewa, Black, St. Croix, Oconto, Peshtigo, Menominee,

and Rock. Although additional water power is rapidly being developed, according to reports by the U. S. engineers, several times the number of horse power now employed remains as yet unutilized.

The favorable location of Wisconsin, in close proximity to the largest cities of the Middle West, on one hand, and but a moderate distance from the great agricultural regions beyond the Mississippi, on the other, gives the state a nearby market for a very large part of its manufactured products and at the same time places within easy reach a number of raw materials which are not produced in a sufficient quantity within the state.

The transportation facilities possessed by Wisconsin are excellent. Access to the state is afforded by vessels plying on the Great Lakes for more than 400 miles along the northern and eastern borders. On the western boundary there are about 250 miles of navigable rivers; while nearly every city situated upon the Great Lakes or the Mississippi has one or more rivers within its limits navigable for harbor purposes. The larger of the rivers already mentioned are navigable to a greater or less extent; notably the Fox, which permits of the passage of vessels of large draft as far as Oshkosh. Wisconsin is covered with a network of railways reaching to every portion of the state. The total mileage in 1906 was 7086 miles. The state is crossed by the Chicago-St. Paul line of the C. & N. W. Ry., the C. M. & St. P., the W. C., and the C. B. & Q. In addition to the very numerous branches of these systems there are 41 other roads doing business in this state. Having the option of either water or rail transportation, the majority of Wisconsin manufacturers have long enjoyed favorable railway rates. An efficient state railway rate commission is doing much to remove any inequitable conditions that may still exist.

Finally there should be mentioned among the advantages of Wisconsin as a manufacturing state what may be called a "co-operation of industries." Whenever the industries of any state become of a sufficiently varied character each branch of manufacturing demands for its material or for its tools the product of some other industry, and in return offers its product to be similarly used by this or a different industry. Such are the conditions in Wisconsin at the present time. Not only does the state send out its products far beyond its borders—many to Europe and other foreign continents,—but it is also in a manu-

facturing way in a large measure "sufficient unto itself," each branch of its varied industries cooperating with and strengthening others.

Management and Operation of Establishments.—A slight tendency toward corporate management is evident in the returns from the 1513 establishments which reported in both 1904 and 1905. During the latter year 23 establishments which had existed as private firms organized as corporations. The proportion of corporations to private firms at the end of 1905 was 836 to 677.

The average number of days of operation for these establishments was 298 in 1904 and 300 in 1905. For 2382 establishments it was 290 in 1905. The number of working days per year in Wisconsin—i, e., exclusive of Sundays and legal holidays—is from 303 to 306. In neither of the two years therefore was the average number of days of operation as large as possible. It was even slightly farther from the maximum possible number than is at first apparent; since in a large number of establishments both day and night shifts were employed, thus increasing the average number of days of operation for all. The days in which the establishments were not in operation were however so few as to indicate a very satisfactory degree of activity in each of the two years considered.

Investment, and Value of Product.—For the 51 leading industries there was an increase of 4 per cent in 1905 in the total capital invested. Every item of investment showed a gain, the increase in the value of buildings and fixtures being the greatest—over 5 per cent. There was an increase of 11 per cent in the value of the materials used, of 8 per cent in the total wages and salaries paid, and of 10 per cent in the value of the output. The last gain is especially noteworthy in view of its being more than double the average increase per year in the value of the output during the decade from 1890 to 1900. This increase of 10 per cent serves more than any other single fact, to indicate the large growth of manufacturing in the state in the two years covered by this report.

Number of Employees and Range of Employment.—The largest number of employees in any month, in the 1513 establishments of the 62 industries reported upon, was 82,830 in 1904 and 89,035 in 1905. The average number per month for 1904 was 80,195; for 1905, 85,436. The number of those whose wages

were reported in detail was 77,794 in 1904 and 80,506 in 1905. For the 62 industries as a whole, employment was very uniform each year. The maximum of unemployment was in January and February. Such variations as existed in 1904 in the percentage employed each month were due to slight changes in general trade conditions—fluctuations in activity, due to any one of many different causes. In 1905 as has already been noted, there was a remarkably steady increase in the average number of employees for several months, with the maximum number in November. The regularity of this increase from month to month seems to indicate that the increase was one due to perfectly natural causes: Young persons became of such age as to begin work as wage-earners, and workmen immigrated to the state and found employment.

Employment of Women and Children.—In 1904, 14,415 female employees were reported; in 1905, 14,990. There was therefore an increase of 3.9 per cent in the latter year. The increase in the average number of all persons employed was about 6.5 per cent. There was therefore a smaller percentage of increase in the number of women employed, than in the total number of employees. This means also that the number of female employees was smaller in proportion to the number of all employees in 1905 than in 1904.

No separate report upon the number of children employed in the various industries has been secured by this Bureau. From the data on hand, however, it may be computed that children are employed in considerable numbers in 12 of the 62 industries reported upon. The majority of these belong to the class known as "parasitic industries,"—industries carried on generally at large manufacturing centers, and utilizing the labor of the children of workmen employed in other industries.

Hours of Labor, and Wages.—There was a very slight increase in the average hours of labor of all employees, for 1905. The hours of men were 9.91 and 9.92 per day for 1904 and 1905 respectively; those of women, 9.64 and 9.71. Men therefore worked about 16 minutes more per day than women in 1904, and about 13 minutes more in 1905.

The average daily wages of all employees were about 2 per cent higher in 1905 than in 1904; those of men, 2½ per cent; those of women, less than 1 per cent. In the 51 leading industries, there was a very slight decrease in the average daily wages

of women, which was offset only by a considerable increase in the wages of those employed in the 11 minor industries.

It is perhaps worthy of notice that in a total of 28 industries in which 10 per cent or more of the employees were women, the average wages of male employees were about \$1.72 in 1904 and \$1.74 in 1905. While in a total of 34 industries in which no women were employed, or in which female employees constituted less than 10 per cent of the total number, the average wages of men were about \$1.81 in 1904 and about \$1.86 in 1905. These facts would seem to support the view quite generally held, that the entrance of woman into the industrial field as a competitor of man not only lowers the average wages paid in the industry in a degree proportional to the amount by which her wages are less than man's, but also causes a decrease in the actual wages paid to the male employee.

The question is always one of considerable interest, whether the increase in daily wages is proportional to the increased cost of the necessities of life. The national Bureau of Labor, in bulletin No. 65, attempts to answer the question in so far as it concerns the cost of the various articles of food. The bulletin does not report for each state separately, but for each of six geographical divisions of the whole country. For the North Central States as a whole, it was found that the average food cost per workingman's family for 1904 was \$339.79, and for 1905, \$342.82. There was therefore an increase of slightly less than 9-10 of 1 per cent in the latter year. If this average can be assumed to hold good for Wisconsin, the increase in the average daily wages—about 2 per cent—was evidently more than sufficient to cover the increased cost of food. But the cost of food was found in 1901 to average only about 43 per cent of the total expenditures of a working man's family. Inasmuch therefore as no facts are ascertainable regarding the cost of the other necessities, and as the percentage for 1901 need not hold good for other years, the general question cannot be considered as definitely answered in the affirmative. Apparently, however, the increase in the average daily wages in 1905 was sufficient to cover the increased cost of the necessities of life in that year.

The average yearly income of a workingman's family in the North Central States in 1901, according to the bulletin already mentioned, was \$842.60. The average yearly earnings of all employees in Wisconsin in 2382 establishments are found to

have been \$467.58 in 1905. The apparent discrepancy is due to the fact that the latter amount represents the average yearly earnings of individuals—men, women, and children. The former amount is in many cases the sum of the yearly earnings of several members of a family. Inasmuch therefore as no data are presentable relating to the average number of wage-earners in a workingman's family in this state, a comparison between the average income of a family in Wisconsin and of those in other states is not possible.

Summary.—Inasmuch as the tables presented in this report are based upon returns from less than half of the total number of manufacturing establishments in the state, the conclusions based upon them do not necessarily hold good for all establishments. In the case of all but a few industries, however, it was the most important establishments from which reports were received. For this reason it is believed that the facts ascertained in relation to the establishments which reported in 1904 and 1905 represent with a fair degree of accuracy the general industrial conditions existing in the state. It appears then that during the years 1904 and 1905 the manufacturing industries of Wisconsin experienced, with but few exceptions, a very satisfactory growth. Each year was marked by an unusual degree of activity. The average number of days of operation was large. The number of persons employed increased with considerable regularity. There was an increase in the capital invested, in the materials used, the product manufactured, and the average wages paid. Relatively fewer women were employed. In brief, the period may be said to have been one of industrial progress, in which there was a constantly increasing utilization of the abundant opportunities offered by the state to manufacturing industries.



PART VII.

FACTORY AND BAKERY INSPECTION,
FREE EMPLOYMENT OFFICES
AND APPENDIX.

FACTORY INSPECTION.

One of the most important duties imposed upon the Bureau is the inspection of all factories, work-shops, mercantile establishments, etc., in the state, in which men, women, or children are employed; and of all hotels, lodging-houses, theatres, and other places of public resort. The inspection of the former class of establishments has for its chief purpose the enforcement of the laws which make provision for the health and safety of the persons therein employed. In the case of public buildings, inspection is made mainly to secure the safety of the public generally, by insuring the existence of adequate means of egress in the event of fire. The inspection of bakeries seeks primarily to protect the public against deleterious food products, by enforcing rigorously sanitary conditions in all that is concerned with the manufacture of bread and similar foods.

A period of two years, ending October 31, 1906, is covered by this report. The chief facts of interest ascertained by the inspectors in the course of their work, together with the steps taken to remedy any conditions demanding action, are summarized in the following tables. The first set of tables pertains to the factories and workshops inspected, exclusive of cigar factories, bakeries, and public buildings. In the first table the firms are presented by cities and villages, with the number of buildings occupied by each, classified as to height; the number of employees, classified as to sex; the number of children under sixteen years of age employed; and the number of steam boilers and the total horse power, where steam power is used. In the second table, which is largely a summary of the first, the totals of the above items are given for each city or village, and, in addition, the total number of establishments in each and the number using other than steam power. Aside from the individual facts of interest these two tables possess considerable

value as affording a reasonably complete directory of the manufacturing establishments of the state, and also as indicating in some degree the relative importance of the various cities as manufacturing centers.

It will be observed that 350 places were visited by the inspectors and a total of 4,237 establishments inspected. It should be noted, however, that these figures do not represent the entire activity of the agents of the Bureau in reference to the manufacturing establishments of the state, inasmuch as two or more inspections were made in the case of nearly every establishment. It is the policy of the Bureau to follow an inspection by a second inspection within a short time, in order to ascertain whether all orders made have been complied with, and if not, to take such steps, by prosecution if necessary, as will result in a full compliance with the law. It has been found advisable also to inspect each establishment at least as often as every year.

The remainder of the first set of tables deal with various facts pertaining to the establishments inspected. The majority are self-explanatory, and comment will therefore be made only when it is desired to call attention to facts of special interest.

FACTORY INSPECTION.

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TABLE I—ESTABLISHMENTS INSPECTED.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
ABBOTSFORD, CLARK CO.								
Abbotsford Creamery Co.....	1		2		2		1	15
Lamb & Brown, Saw mill.....	1		10		10		1	75
Wisconsin Central Ry., Car shops	7		48	3	51		4	180
Total	9		60	3	63		6	270
ALBANY, GREEN CO.								
Albany Electric Light & Milling Co.		1	2		2			
Albany Hardware Specialty Mfg. Co., Door latches	1		5		5			
Albany Vicindicator, The, Publishing	1		1	1	2			
Albany Tannery	1		1		1			
Black Hawk Mills, Linen toweling.	2		27	29	56		1	80
Oliver, W. J., Iron repairs	1		3		3			
Total	6	1	39	30	69		1	30
ALGOMA, KEWAUNEE CO.								
Ahnapee Veneer Seating Co.....	9	2	115		115	1	1	200
Algoma Iron Works, Foundry and machine shops	1		1		1			
Algoma Packing Co., Pea canning .	3		210	40	250	26	2	150
Algoma Record, Publishing	1		3		3			
Algoma Steam Laundry	2		2	4	6		1	40
Algoma Water & Light Plant	2		3		3		2	160
Grimm, Henry, Sash, doors and blinds	5		13		13		1	60
Kelsey, G. H. Jr., Fly nets	3		13	12	25			
Plumbers' Wood Work Co.	3		17		17		1	100
Woodsdalek, Jos. & Co. Foundry and machine shop	4		5		5		1	30
Total	33	2	382	56	438	27	9	740
ALMA, BUFFALO CO.								
Alma Brewing Co.	4		2		2		1	25
Buffalo County Journal, Publishing	1		3		3			
Rupp, M., Soda water	1		2		2			
Total	6		7		7		1	25
AMERY, POLK COUNTY.								
Amery Lumber Co., Saw and planing mill	2		30		30		2	125
City Water Works	1		2		2			
Electric Light Plant	1		1		1			
McMatson, Brickyard	1		6		6		1	40
Northern Supply Co., Grist mill		1	10		10			
Porter, J. F., Tannery	1		2		2		1	10
Soo R. R. Co., Elevator		1	2		2			
Wisconsin Dairy Co., Creamery	1		2		2		1	30
Total	7	2	55		55		5	205

TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
AMHERST, PORTAGE CO.								
Advocate, Publishing	1	.....	1	1	2	.....	.....	.....
Amherst Jersey Creamery Co.	1	.....	2	.....	2	.....	1	20
Dwinell & Scheidel, Electric light ..	1	.....	1	.....	1	.....	.....	.....
Jackson Milling Co., Grist mill	1	.....	4	.....	4	.....	.....	.....
Rounds, A. L., Planing mill	1	.....	2	.....	2	.....	1	12
Total	5	.....	10	1	11	.....	2	32
ANNITA, BAYFIELD CO.								
Barnes, Geo. S., Saw mill	1	.....	40	.....	40	.....	2	70
Hermann & Johnson, Saw mill	1	.....	40	.....	40	.....	1	75
Total	2	.....	80	.....	80	.....	3	145
ANTIGO, LANGLADE CO.								
Antigo Brewing Co.....	4	1	10	1	11	.....	1	80
Antigo Building Supply Co., Lum- ber and wood work	6	.....	21	.....	21	.....	1	75
Antigo Electric Light Co.....	2	.....	8	.....	8	.....	3	200
Antigo Herald, Publishers	1	.....	3	1	4	.....	.....	.....
Antigo Journal, Publishers	1	.....	8	1	9	2	.....	.....
Antigo Manufacturing Co., Cooper- age stock	1	.....	28	.....	28	.....	1	100
Antigo Republican, Publishers	1	.....	5	.....	5	.....	.....	.....
Antigo Water Co., Water works	1	.....	2	.....	2	.....	2	180
Citizens' Brewing Co.	3	1	11	1	12	.....	1	100
City Stone Crusher	1	.....	11	.....	11	.....	1	25
Crocker Chair Co.	5	1	76	.....	76	4	5	360
Frost Veneer Seating Co.	4	1	46	6	52	10	3	180
Grabowsky, Ed., Brick yard .....	.....	.....	5	.....	5	2	.....	.....
Kellogg, T. D. Mfg. Co., Planing mill	3	.....	24	.....	24	.....	1	80
Kingsbury & Henshaw, Flour and saw mill	5	2	50	1	51	.....	4	250
Meyer, Herman, Brick yard .....	.....	.....	5	.....	5	.....	.....	.....
Pioneer Iron Works, Machine shops ..	1	.....	5	1	6	.....	.....	.....
Weekly News Item, The, Publishers ..	1	.....	4	.....	4	.....	.....	.....
Wirtz, A. L. Co., Elevator .....	.....	1	4	.....	4	.....	.....	.....
Wisconsin Bark & Lumber Co.	6	.....	54	.....	54	.....	3	260
Total	46	7	380	12	392	13	26	1,870
APPLERIVER, POLK CO.								
Appleriver Power Co., Power plant ..	1	.....	1	.....	1	.....	.....	.....
Total	1	.....	1	.....	1	.....	.....	.....

TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.			Boilers.		
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
APPLETON, OUTAGAMIE CO.								
Appleton Chair Co.	2		56	4	60	12	2	100
Appleton Evening Crescent, Publishing	1		14	1	15	1		
Appleton Hay Tool Co., Hay tools and car movers	1		3		3			
Appleton Knitting Co.	2		5	40	45			
Appleton Machine Co.	3		54		54			
Appleton Malting & Brewing Co.	2	1	16		16		2	125
Appleton Paper Box Factory	1		1	7	8	4	1	9
Appleton Paper & Pulp Co., Pulp	1		13		13			
Appleton Post, Publishing		1	12		12			
Appleton Rug Works	1		8		8	2		
Appleton Screen Plate Co., Brass castings	1		21	1	22		1	35
Appleton Shirt & Pants Co., Jobbers of shirts and pants	1		5	1	6			
Appleton Steel Plow Works	1		1		1			
Appleton Toy & Furniture Co.	2		35	15	50	12	1	30
Appleton Volksfreund, Publishing.	1		10		10	1		
Appleton Water Works	1		4		4		2	300
Appleton Wire Works	2		51	9	60		2	60
Appleton Woolen Mills, Felt and yarn	1	1	27	33	60	2	2	225
Atlas Paper Co.		1	66	9	75			
Crescent Knitting Co., The	1		7	50	57			
Double Power Windmill Co.	3		4		4		1	8
Eagle Mfg. Co., Gasoline engines and farm implements	2		22		22			
Electric Laundry	1		2	2	4		1	8
Fairbanks & Timm, Machine shop	2		12		12		1	20
Fox River Journal, Publishing	1		3	1	4			
Fox River Paper Co.	1	3	198	169	367	5	9	1,200
Fox River Screen Plate Co., Screen plates	1		3		3			
Fox River Valley Gas & Electric Co.	2		9		9		1	60
Fox River Valley Marble, Granite and cut stone works	1		15		15			
Heintzkill, J., Soap	1		1		1		1	6
Interlake Paper & Pulp Co., Paper	5	1	209	1	210		8	1,125
Jackson & Co., Printers	1		4		4			
Kimberly-Clark Co., Paper	1	2	76	11	87		2	800
Kurz & Root, Dynamos and motors	1		9		9			
Lake Superior Knitting Works	1		39	6	45			
Langstadt & Meyer, Electrical engineers	1		11	1	12			
Lindley Steam Laundry	1		2	3	5	1		
Marston, J. H., Hubs and spokes.	2		12		12			
Mauser, Renner & Graef, Planing mill	3		25		25	5	1	100
National Laundry Co.	1		2	7	9		1	20
North Side River Woolen Mills, Wool carding	1		3	1	4		1	25
Patton Paper Co., Ltd., Paper	4	1	59	34	93		6	900
Post Bindery Co.		1	4	4	8	4		
Potts, Wood & Co., Creamery and milk depot	1		4	1	5		1	20
Riverside Paper & Paper Co., Paper	3		48	4	52		2	300
Schneider, Adolph, Clubhouse furniture	1		9	1	10			
Standard Mfg., Co., Bank and bar fixtures	4		33		33		1	100
Telulah Paper Co.	2	1	92	36	128	2	6	860
Tuttle Press Co., The, Printing	1		20	8	28			
Valley Iron Works, Paper making machinery	2		60		60			

TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
APPLETON—Continued.								
Walter, Geo., Brewing Co.	1	2	20		20		2	170
Webster, W. M., Planing mill	1		5		5			
Willy & Co., Flour	2	1	15	1	16		2	225
Wilson Co., The, Meat blocks	1		4		4			
Windels, Chas., Bottling	1		1		1			
Wisconsin Malt & Grain Co.	2	2	33		33		2	300
Wisconsin Tissue Paper Co.	1		33	7	40		2	150
Wisconsin Traction, Light, Heat & Power Co.	1		10		10		4	1,240
Wisconsin Wire Works	2		18	3	21		1	43
Wolf & Hegner, Marble cutters ...	1		14		14			
Total	89	18	1,552	471	2,023	51	69	3,564
ARBOR VITAE, VILAS CO.								
Ross Lumber Co.	11		309	1	310		6	600
Yawkey—Bissell Lumber Co.	14		410		410		3	490
Total	25		719	1	720		14	1,090
ARCADIA, TREMPPEALEU CO.								
Arcadia Anzeiger, Printing		1	2	1	3			
Arcadia Brewery	2		3		3		1	40
Arcadia Electric Light Plant	1		1		1		2	160
Arcadia Milling Co., Flour	2	1	3		3		2	140
Arcadian, The, Printing	1		2		2			
Cargill, W. W. Co., Elevator		1	1		1			
Leader, The, Printing	1		1	1	2			
Massuere, W. T. Co., Elevator	1		2		2			
Putnam & Barber, Sash, doors, etc.	2		3		3		1	30
Total	10	3	18	2	20		6	370
ASHLAND, ASHLAND CO.								
Ashland Brewing Co.	5		19	1	20		2	125
Ashland Daily News	1		3	2	10			
Ashland Iron & Steel Co., Smelting and chemical works	21		200		200		5	900
Ashland Lighting & Street R. R. Co.	2		27		27		4	400
Ashland Mfg. Co., Woodwork	1		12		12			
Ashland Steam Dye Works	2		2	2	4		1	35
Ashland Steam Laundry	1		4	11	15		1	30
Ashland Water Works	2		6		6		3	500
Baker, F. H., Candy factory	1		1	3	4			
Bowrim Murray Co., Printing		1	5	1	6			
Bretting Mfg. Co., Iron works	8		59	1	60		2	150
Chicago & Northwestern R. R., Ore docks	2		145		145			
Chicago & Northwestern R. R., Shops	5		245		245		1	75
Clarkson Coal & Dock Co.	1		30		30		2	20
Dhooge's Creamery Co.	1		3		3		1	20
East End Mill, Saw mill	3		115		115		8	500
Hines Lumber Co., Saw mill	4		200		200		5	500
Kindle, Julius, Woodworking	3		8		8		1	60

FACTORY INSPECTION.

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TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total b. p.
ASHLAND—Continued.								
Lake Superior Lumber & Box Co., Boxes	3		125		125		4	380
Menasha Paper Co.	4	1	45		45		4	600
Minneapolis, St. Paul & Ashland R. R., Shops	2		11		11		1	30
Reiss Coal Co., (East side)	3		40		40		3	150
Reiss Coal Co., (West side)	1		20		20		2	30
Reinhart, G. B., Machine shops.....	1		2		2			
Schroeder Lumber Co., Saw mill ..	7		149	1	150		4	300
Scott-Taylor Co., Sash, doors, etc.	5		40		40		2	140
Wisconsin Central Ry., Ore docks ..			40		40			
Wisconsin Central Ry., Shops	1		30		30		1	120
Total	91	2	1,591	22	1,613		56	5,045
ATHENS, MARATHON CO.								
Athens Mfg. Co., Lumber	7		40		40		2	130
Braun Bros., Lumber	3		25		25		3	200
Ceves Roller Mills Co.	1	2	4		4		1	100
Degner Stave & Heading Factory ..	4		25		25	3	2	160
Greunwald, Gustav, Wagons	1		3		3			
Paul, Chas., Wagons	1		3		3		1	8
Reitbroeck Land & Lumber Co.....	10		65		65		5	375
Total	27	2	165		165	3	14	973
ATLANTA, RUSK CO.								
Arpin Lumber Co.	6		83		83		3	450
Total	6		83		83		3	450
BALDWIN, ST. CROIX CO.								
Baldwin Creamery Co.	1		3		3		1	25
Total	1		3		3		1	25
BANGOR, LA CROSSE CO.								
Bangor Independent, The, Publish- ing	1		1	1	2			
Daisy Mill, Grist mill	2		2		2		1	40
Eckhart, Fred, Elevator	1	1	1		1			
Hussa Brewing Co.	6	1	17		17		2	200
Roberts, L. J., Elevator	2		2		2		1	15
Total	12	2	23	1	24		4	265
BARABOO, SAUK CO.								
Altpeter, Oscar, Soda water	1		3		3			
Baraboo City Water Works	1		2		2		1	80
Baraboo Electric Light & Gas Co. ..	3		6		6		2	200
Baraboo News, The, Publishing	1		2	4	6			
Baraboo Republican, The	1		8	4	12			

TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. P.
BARABOO—Continued.								
Baraboo Steam Laundry	1	.....	3	6	9	.....	1	15
Chicago, & Northwestern R. R., Shops	13	.....	121	.....	121	.....	2	100
Efinger, Ferdinand, Brewery	3	1	7	.....	7	.....	1	120
Farnum, Chas.	1	.....	2	.....	2	.....	.....	.....
Gem City Bottling Works, Soda water	1	.....	2	.....	2	.....	.....	.....
Gem Laundry	1	.....	5	4	9	.....	1	15
Gollmar, George J., Machinist	1	.....	3	.....	3	.....	.....	.....
Graf, H. H., Contractor	2	.....	5	.....	5	.....	1	16
Island Woolen Mills	9	1	49	43	92	3	.....	.....
Karteck, J. F., Printing	1	.....	1	.....	1	.....	.....	.....
McArthur, G. E. & Son, Towels and rugs	3	.....	16	21	37	1	1	15
Manchester Mills, Grist mill	1	.....	1	.....	1	.....	.....	.....
Moeller, H. & Son, Wagons and carriages	2	.....	8	.....	8	.....	.....	.....
Roick, Henry, Grist mill	1	.....	2	.....	2	.....	.....	.....
Rubland Brewing Co.	2	.....	6	.....	6	.....	1	20
Sauk County Democrat	1	.....	2	2	4	.....	.....	.....
Schacht & Kramer, Contractors	1	.....	4	.....	4	.....	.....	.....
Total	51	2	260	84	344	4	11	691
BARKSDALE, BAYFIELD CO.								
Eastern Dynamite Co.	51	.....	200	.....	200	.....	3	850
Total	51	.....	200	.....	200	.....	3	850
BARRON, BARRON CO.								
Barron Creamery Co.	1	.....	3	.....	3	.....	1	20
Barron Roller Mills .....	.....	1	6	.....	6	.....	.....	.....
Barron Stave & Heading Co.	1	.....	40	.....	40	2	1	150
Barron Woodwork Co.	1	.....	8	.....	8	.....	1	35
Barron Woolen Mills	3	.....	16	.....	16	.....	.....	.....
Holtz, C. & Son, Woodwork	1	.....	12	.....	12	.....	1	40
Smith, Edward E., Woodwork	2	.....	20	.....	20	.....	1	45
Total	9	1	105	.....	105	2	5	290
BARRONETTE, BARRON CO.								
Barronette Creamery Co.	1	.....	2	.....	2	.....	1	20
Laurson, H. M., Brick yard	1	.....	8	.....	8	.....	1	30
Laurson, Peter, Brick yard	1	.....	6	.....	6	.....	1	25
Total	3	.....	16	.....	16	.....	3	75
BAYFIELD, BAYFIELD CO.								
Bayfield Press, Printing	1	.....	3	1	4	.....	.....	.....
Bell, W. H., Contractor	1	.....	2	.....	2	.....	.....	.....
Booth, A. & Co., Fish packers	9	.....	125	.....	125	.....	1	40
Boutin, L. S., Fish packers	5	.....	100	.....	100	.....	1	10
City Water Works	1	.....	3	.....	3	.....	2	300
Pike Lumber Co.	4	.....	100	.....	100	.....	6	740
Terry, Alfred, Box Factory	1	.....	2	.....	2	.....	1	10
Total	22	.....	335	1	336	.....	11	1,100

TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	T. tal.	Under 16 yrs. of age.	No.	Total h. p.
BEAVER DAM, DODGE CO.								
American Steam Laundry	1	.....	1	3	4	.....	1	12
Beaver Dam Argus, Printing	1	.....	6	.....	6	.....	.....	.....
Beaver Dam Brewery	2	.....	5	.....	5	.....	.....	.....
Beaver Dam Cotton Mills, Sheeting	1	1	50	100	150	5	3	150
Beaver Dam Gas Co.	1	.....	1	.....	1	.....	.....	.....
Beaver Dam Illuminating Co., Elec- tricity	1	.....	5	.....	5	.....	2	300
Beaver Dam Malleable Iron Co.	6	.....	350	4	354	5	2	300
Beaver Dam Malleable Range Co.	2	.....	210	.....	210	3	2	250
Beaver Dam Mfg. Co., Seeders and drills	2	.....	20	.....	20	.....	.....	.....
Beaver Dam Overall Co.	1	.....	2	3	5	.....	.....	.....
Beaver Dam Woolen Mills	2	1	60	100	160	2	4	235
Brinzel Brewing Co.	3	.....	7	.....	7	.....	1	10
Bon Ton Bottling Works	1	.....	6	.....	6	.....	.....	.....
Citizens' Printing Co. ....	.....	1	6	1	7	.....	.....	.....
Empire Mills, Flour	1	1	3	.....	3	.....	1	100
Harder, H. J., Gas engines.	1	.....	2	.....	2	.....	.....	.....
Jigler Brewery	1	1	4	.....	4	.....	1	30
Miller, J. W., Monuments	1	.....	5	.....	5	.....	1	30
Quaw, A. F. & Son, Jobbers.	1	.....	10	.....	10	.....	.....	.....
Rowell, J. S. Mfg. Co., Farm im- plements	5	5	100	1	101	.....	1	125
Woolen Mfg. Co., Woolen goods ...	8	1	50	50	100	.....	2	100
Total	42	11	903	265	1,165	15	21	1,642
BELDENVILLE, PIERCE CO.								
Crescent Creamery Co.	1	.....	1	.....	1	.....	1	12
Junkman, J. O., Elevator	1	1	3	.....	3	.....	.....	.....
Larson Brothers, Saw mill	1	.....	10	.....	10	.....	1	50
Total	3	1	14	.....	14	.....	2	62
BELLWOOD, DOUGLAS CO.								
Bell Lumber Co.	1	.....	40	.....	40	.....	2	80
Total	1	.....	40	.....	40	.....	2	80
BELOIT, ROCK CO.								
Barrett Mfg. Co., Tar paper	6	.....	38	2	40	.....	6	600
Beloit Carriage Works, Wagons and carriages	2	.....	6	.....	6	.....	.....	.....
Beloit Creamery	3	.....	2	.....	2	.....	1	14
Beloit Daily News	1	.....	14	.....	14	.....	.....	.....
Beloit Electric Co., Light and power	2	.....	4	.....	4	.....	3	450
Beloit Foundry Co.	1	.....	15	.....	15	.....	.....	.....
Beloit Free Press	1	.....	9	3	12	.....	.....	.....
Beloit Gas, Light & Coal Co.	3	.....	7	.....	7	.....	1	40
Beloit Glove & Mitten Co. ....	.....	1	2	8	10	.....	.....	.....
Beloit Iron Works, Paper mill ma- chinery	7	.....	150	1	151	.....	2	30
Beloit Nickel Plating Works	1	.....	3	.....	3	.....	.....	.....
Beloit Steam Laundry	1	.....	3	14	17	.....	1	8
Beloit Water, Electric Light & Gas Co.	4	.....	14	.....	14	.....	1	9
Bersly, Chas. H., Machine shop.	4	.....	75	.....	75	.....	.....	.....
Berlin Machine Co.	14	2	620	.....	620	.....	3	450
Clement Bros. Machine shop	1	.....	2	.....	2	.....	.....	.....
Cunningham Bros., Sash and doors	4	.....	29	1	30	.....	.....	.....
Doud Knife Works, Machine knives	4	.....	25	.....	25	.....	1	60

TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
BELOIT—Continued.								
Eureka Laundry	1		3	12	15		1	50
Fairbanks—Morse, Mfg. Co., Wind-mills, gas engines and pumps	23		1,919	6	1,925		7	700
Foster, John, Co., Shoes	4		71	57	128	3	2	90
Gardener Machine Co., Grinding machines	1		7		7			
Gaston, N. B. & Sons Co., Scales	1	1	52		52			
Johnson, O. J., Wagons	1		2		2			
Mattison Machine Works	2		17		17			
Mead, A., Elevator	3		1		1		1	30
Miller Co., Feed mill	2		1		1			
Northern Grain Co., Feed mill	1		3		3			
Parisian Steam Laundry	1		4	4	8		1	24
Pierce, M. C., Specialty Co., Specialties	1		1		1			
Rockford, Beloit & Janesville Ry. Co.	4		50		50		3	1,350
Rosenblatt, H. & Son, Clothing	4		30	95	125			
Schlink, F., Ale and porter brewery	1		2		2		1	15
Slater & Marsden, Machine shop	1		3		3			
Star Mills, Feed		1	1		1			
Stockwell, F. C., Printing	1		2		2			
Thompson, J. & Sons, Mfg. Co., Plows	6	1	112		112		3	200
Warner, C. O., Sash and doors	1		3		3			
Warner Instrument Co., Autometers	1		74	13	87		2	
Whitney, W. C., Gas engines	1		1		1			
Total	117	6	3,377	216	3,593	5	38	4,120
BENTON, LAFAYETTE CO.								
Century Mining Co.	1		5		5		1	70
Chicago, Benton Mining Co.	1		12		12		1	80
Corr Mining Co.	1		5		5		1	70
Dawson Mining Co.	1		16		16		2	180
Empress Mining Co.	1		20		20		1	80
Etna Mining Co.	1		13		13		1	125
Jug Handle Mine	1		20		20		2	180
Monarch Mining Co.	1		20		20		2	180
Municipal Light & Water Plant	2		2		2		1	40
Ollie Bell Mining Co.	1		6		6		1	80
Pittsburg, Benton Mining Co.	1		23		23		1	80
Rowley Mining Co.	2		12		12		1	80
Total	14		159		159		15	1,245
BERLIN, GREEN LAKE CO.								
Berlin Brewing Co.	3	2	7		7		1	40
Berlin Canning & Pickling Co.	1		4		4			
Berlin Bottling Works	1		3		3	1		
Berlin Courant, The, Printing	1		3	3	6	1		
Berlin Journal, The, Printing	1		3	4	7			
Berlin Lighting, Heating & Power Co.	2		4		4		4	430
Berlin Water Co.	2		2		2		2	140
Berlin Whip Co., Gloves and mittens	1		5	60	65			
Darlin, A. B., Whips	1		2		2			
Hicks, Geo. C., Printing	1		3	1	4			
Johnson—Fortnum Machine Works, Repair shops	2		5	1	6			

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TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
BERLIN—Continued.								
Luther, Henry Co., Brooms and washboards	2		20		20		1	25
Luther, J. P., Glove Co., Gloves and Masonic aprons	1		15	20	35			
Metzig Bros., Wagons	1		3		3			
Model Laundry	1		1	5	6		1	18
Morris, C. S., Feed mill	1		10		10		1	65
Murphy, J. E., Butter tubs	1		12		12		1	20
Peck Hardware Co., Mail boxes	1		17	1	18			
Russel, Frank, Glove Co.	1		17	135	152			
Russel, W. C., Leather goods, gloves and mittens	1		15		15			
Sears, Hitchcock Co., Hides and leather	1		15		15			
Sillman, Wright & Co., Flour and feed	2	2	15		15			
Stedman, H. E., Gloves	1		2	13	15			
Talcot Glove Co., Gloves and mittens	1		2	30	32			
Trusdell Fur Coat Co.	2		28	7	35	1	1	50
Wisconsin Granite Co.	7	1	150		150		2	180
Wright Co., Boots and shoes	1		34		34			
Total	41	5	597	280	677	3	14	968
BIBON, BAYFIELD CO.								
Chicago Lumber & Coal Co., Saw and planing mills	4		120		120		2	250
Total	4		120		120		2	250
BIRCHWOOD, WASHBURN CO.								
Ahnapee Veneer & Seating Co.	7		60		60	4	2	190
Buckland, W. L., Saw mill	1		10		10		1	75
Total	8		70		70	4	3	265
BIRNAMWOOD, SHAWANO CO.								
Andrew, B. B. & Son., Excelsior, fuel, light and water	4		10		10			
Birnamwood News	1		2		2			
McEachron, H. E. Co., Warehouse	1		1		1			
Van Doran & Andrews, Saw mill	3		30		30		2	140
Total	9		43		43		2	140
BLACK RIVER FALLS, JACKSON CO.								
Badger State Banner, Publishing ..	1		5		5			
City Electric Light Plant	1		1		1			
Galster, Joseph, Sleds and wagons ..	1		4		4			
Jackson County Journal	1		3	1	4			
Thompson's Iron Works, Foundry and machine shop	1		5		5			
McGillivray, J. J., Sash, doors and blinds	1		16		16			
Total	6		34	1	35			

TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
BLAIR, TREMPÉALEAU CO.								
Blair Electric Light Plant.....	1		1		1		1	35
Blair Press, Publishing.....	1		2		2			
Cargill, W. W., Elevator.....		1	1		1			
Hyslop, W. G., Flour.....		1	4		4			
Matson & Gutknecht, Wagons and sleighs.....	1		2		2		1	10
Preston Creamery Co.....	2		3		3		1	19
Total.....	5	2	13		13		3	64
BLOOMER, CHIPPEWA CO.								
Advance Printing.....	1		2	1	3			
Advocate Printing.....	1		1	1	2			
Bloomer Brewery Co.....	2		6		6		1	20
Bloomer Creamery Co.....	2		3		3		1	20
Bloomer Machine Works, Iron works	2		4		4			
Bloomer Produce Co.....	1	1	5		5			
Bloomer Roller Mills.....	2		4		4			
New Richmond Roller Mills Co., Elevator.....	1	1	3		3			
Wilson-Weber Lumber Co.....	2		4		4		2	30
Total.....	14	2	32	2	34		4	120
BOSCOBEL, GRANT CO.								
Bekkedal, M. H., Leaf tobacco.....	1		45	9	53			
Rock, F. E., Bottling works.....	1		1		1		1	10
Boscobel Brewery.....	5	2	4		4		1	20
Boscobel Creamery.....	1		1		1		1	15
Boscobel Electric Light Plant.....	4		2		2		2	200
Boscobel Roller Mills.....	5	1	2		2		1	75
Botlen, L. P., Wagons and carriages.....	1		2		2			
Dial Enterprise, The, Printing.....	2		3		3			
Eastman Lumber Co., Boxes.....	2		2		2			
Ruka Bros., Foundry and machine shop.....	4		12		12			
Rustic Novelty Works, The, Rustic chairs.....	1		3		3		1	4
Sentinel, The, Printing.....	1		3		3			
Total.....	28	3	30	8	38		7	324
BRANDON, FOND DU LAC CO.								
Brandon Creamery Association.....	1		1		1		1	15
Brandon Gasoline Works, Light.....	1		1		1			
Brandon Times, Printing.....	1		1	2	3			
Milwaukee Elevator Co., Elevator.....	1		1		1			
Sherwin, E. C. & Son, Bridge builders.....	1		2		2			
Wisconsin Malt & Grain Co., Elevator.....	1		1		1			
Total.....	6		7	2	9		1	15

TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
BRILL, BARRON CO.								
Brill Creamery Co.	1		1		1		1	20
Total	1		1		1		1	20
BRILLION, CALUMET CO.								
Behuke Milling Co., Flour and electric light	1	2	6		6		1	100
Brillion Cheese Factory	1		2		2		1	12
Brillion Iron Works	3		13		13		1	25
Brillion Lumber Co., Planing mill	2		13		13		1	80
Brillion News, Printing	1		1	1	2			
Brillion Wooden Ware Co., Cheese boxes		2	40		40		1	80
Kuchle & Bruss, Elevator	1		3		3			
Union Lime Works	3		65		65		1	60
Total	12	4	143	1	144		6	357
BRISTOL, KENOSHA CO.								
Bristol Tile Works		1	5		5		1	40
Farmers' Bristol Creamery	1		3		3		1	20
Total	1	1	8		8		2	60
BRODHEAD, GREEN CO.								
American Cigar Co., Leaf tobacco	3		20	40	60		1	50
Bliss & Son, Grist mill		1	4		4			
Brodhead Electric Light Co.	1		1		1			
Brodhead Independent, The, Printing		1	3	2	5			
Brodhead Register, The, Printing	1		3	2	5			
Brodhead Water Co.	1		1		1			
Gombars Steam Laundry	1		1		1			
Holiday & Co., Machine shop	1		2		2			
Vehling, F. O., Creamery	1		2		2		1	20
Total	9	2	37	44	81		2	70
BROKAW, MARATHON CO.								
Wausau Paper Mills Co.	19		265	10	275		5	1,200
Total	19		265	10	275		5	1,200
BROOKLYN, GREEN CO.								
Brooklyn Cheese & Butter Association	1		2		2		1	20
Capitol Chair Co., Patented chairs	6		10		10		1	80
Total	7		12		12		2	106
BROWN'S SPUR, MARINETTE CO.								
England, H., Saw and shingle mill	1		25		25		1	100
Total	1		25		25		1	100

TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
BRUCE, RUSK CO.								
Beldenville Lumber Co., Lumber and Veneer Mfg.	8	.....	75	.....	75	.....	3	140
Total	8	.....	75	.....	75	.....	3	140
BUNCOMBE, LAFAYETTE CO.								
Winnebago Mining Co.	2	.....	60	.....	60	.....	3	400
Total	2	.....	60	.....	60	.....	3	400
BUNDY, LINCOLN CO.								
Worden Lumber Co., Saw mill	6	.....	125	.....	125	.....	4	600
Total	6	.....	125	.....	125	.....	4	600
BURKHARDT, ST. CROIX Co.								
Burkhardt, C., Elevator and milling	2	2	10	.....	10	.....	.....	.....
Total	2	2	10	.....	10	.....	.....	.....
BURLINGTON, RACINE CO.								
Burlington Blanket Co.	6	1	87	81	168	.....	2	160
Burlington Brass Works, Plumbers' supplies	3	.....	35	.....	35	.....	1	40
Burlington Water Works	5	.....	1	.....	1	.....	2	100
Burlington Electric Light & Power Plant	3	.....	5	.....	5	.....	2	200
Burlington Free Press	1	.....	3	.....	3	.....	.....	.....
Burlington Steam Laundry	1	.....	1	3	4	.....	1	20
Fink & Uehn, Brewery	1	2	20	.....	20	.....	3	200
Klein, F. F., Bottling works	3	.....	9	.....	9	.....	1	25
Lawton & Bushman, Harness repair	1	.....	2	1	3	.....	.....	.....
McCanna & Frayser Co., Creamery	1	.....	8	.....	8	.....	.....	.....
Multiscope & Film Co., Cameras	2	.....	21	4	25	.....	.....	.....
Standard Democrat, The	1	.....	3	.....	3	.....	.....	.....
Voorhees & Fisk, Window frames, ladders, etc.	1	.....	10	.....	10	.....	2	70
Wagner Bros., Machine shop	3	1	3	.....	3	.....	1	15
Wisconsin Condensed Milk Co.	4	.....	58	7	65	.....	4	600
Zwiebler, A., Machine shop	1	.....	4	.....	4	.....	.....	.....
Total	37	4	270	96	366	.....	19	1,430
BUTTERNUT, ASHLAND CO.								
Bauer Bros. & Knapp, Saw mill	2	.....	30	.....	30	.....	1	50
Butternut Eagle, Printing	1	.....	2	.....	2	.....	.....	.....
Butternut Stave Co., Stave mill	3	.....	20	.....	20	.....	1	150
Creamery Package Co., Veneer factory	6	.....	55	.....	55	3	1	80
Goellner Bros., Saw mill	1	25	25	1	80
Nutting, D. K., Saw mill	1	4	4	1	16
Total	14	136	136	3	5	406

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TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
CAMBRIA, COLUMBIA CO.								
Cambria Gas Light Co.....	1		1		1			
Cambria News, Printing.....	1		1	2	3			
Cambria Roller Mills.....	1		2		2		1	80
Friday, Fred, Creamery.....	1		2		2		1	20
Williams, D. R., Elevator.....	1		1		1			
Total	5		7	2	9		2	100
CAMBRIDGE, DANE CO.								
Benson, Louis, Creamery.....	1		3		3		1	20
Curtis, Wm., Feed.....	2		2		2		1	40
Daw's Mill, Feed.....	2		3		3		1	65
Vetterlein & Co., Leaf tobacco.....	2		55	20	75	1	1	10
Total	7		63	20	83	1	4	135
CAMERON, BARRON CO.								
Breitenbach, John, Creamery.....	1		1	1	2	1	1	15
Cameron Creamery.....	1		1	1	2		1	15
Cameron Review, Printing.....	1		2		2			
Oak Grove Handle Co.....	1		9		9		1	45
Total	4		13	2	15	1	3	75
CAMPBELLSPORT, FOND DU LAC CO.								
Campbellsport Glove & Mitten Works.....	1		1	3	4			
McCullough Bros., Elevator.....	1		2		2			
Newcastle Roller Mills.....	1		2		2		1	50
Total	3		5	3	8		1	50
CAROLINE, SHAWANO CO.								
Bnessner, Theodore, Flour.....	1		3		3			
Thiele, Ernest, Saw mill.....	1		10		10		1	50
Total	2		13		13		1	50
CARROLLVILLE, MILWAUKEE CO.								
Lake Side Distilling Co.....	6	1	22		22		7	560
United States Glue Co.....	11	1	158	51	209	11	6	3,000
Total	17	2	180	51	231	11	13	3,560
CASHTON, MONROE CO.								
Cashton Independent, The.....	1		1	1	2			
Cashton Milling Co., Flour and electric light.....	3	1	4		4		1	75
Cashton Record, The.....	1		2		2			
Cashton Steam Laundry.....	1		1		1		1	12
Central Wisconsin Creamery Co.....	1		2		2		1	30
Enterprise Creamery Co.....	1		1		1		1	20
Hall, H. J., Interior finishing.....	3		7		7		1	20
Mitby, P. E., Elevator.....	1		1		1			
United Cigar Co., Leaf tobacco.....	1		55	25	80			
Total	13	1	74	26	100		5	197

TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
CASSVILLE, GRANT CO.								
Cassville Brewery	3	1	5		5		1	30
Cassville Record, Printing.....	1		2	1	3			
City Water Works & Electric Light Plant	1		1		1		1	40
Kleinpell Bros., Planing mill.....	4		4		4		1	60
Klindt-Geiger Canning Co.....	4		60		60		3	205
Total	13	1	72	1	73		6	335
CAVOUR, FOREST CO.								
Bentzinger & Groomer, Lumber.....	1		16		16		1	65
Total	1		16		16		1	65
CEDARBURG, OZAUKEE CO.								
Cedarburg Brewery	6		6		6		1	25
Cedarburg Electric Light Co.....	1		2		2		2	250
Cedarburg News	1		1	2	3			
Cedarburg Roller Mills.....	1	1	5		5			
Cedarburg Wire Nail Co.....	4	1	12		12			
Cedarburg Woolen Mills.....	2	1	75	25	100		2	300
Columbia Flour Mill.....	3		3		3			
Excelsior Shoe & Slipper Co.....	2		40	20	60		2	75
Hilgen Mfg. Co., Sash and doors....	5		50		50		2	175
Liesenbug Grain Co.....	1	1	2		2			
Milwaukee Falls Lime Co.....	4		42		42		2	125
Rusk Bros., Flour	1		4		4			
Zann, Jacob, Grain, wood and coal.....		5	3		3		1	80
Total	38	10	245	47	292		12	1,030
CEDARGROVE, SHEBOYGAN CO.								
Northern Grain Co., Elevator.....	2	1	3		3			
Wisconsin Moulding & Steel Co., Ranges	2		20		20		2	90
Total	4	1	23		23		2	90
CENTURIA, POLK CO.								
Centuria Heading Mill.....	1		10		10		1	50
Total	1		10		10		1	50
CHASEBURG, VERNON CO.								
Chaseburg Co-operative Co., Creamery	1		2		2		1	12
Chaseburg Roller Mills.....		1	3		3			
Larson & Peterson, Wagons and sleighs	1		2		2			
Raunetsberger, B., Wagons and sleighs	1		2		2			
Total	3	1	9		9		1	12

TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
CHILTON, CALUMET CO.								
Chilton Electric Light Co.....	2		2		2		1	75
Chilton Malting Co.....	5	1	15	1	16		4	450
Chilton Roller Mills.....		1	2		2			
Chilton Steam Laundry.....	3			2	3		1	8
Chilton Times, Printing.....	1		6		6			
Dorschel, Schultz Co., Sash and doors.....	5		10		10		1	80
Duencke & Rassch, Flour.....		1	2		2		1	45
Grienow & Hoch Brewing Co.....	4		6		6		1	25
Juckam, Peter & Co., Elevator.....	5	1	3		3			
Knauf, N., Grain.....	4	1	2		2			
Uhhogge, G., Boiler repairs.....	2		2		2			
Raukober & Rau, Soda water.....	3		3		3			
Steam Granite & Marble Works.....	6		6		6		1	20
Union Elevator Co., Grain.....	1	1	3		3			
Union Roller Mills, Flour.....	2	1	6		6		1	100
Vahldieck, A. H., Foundry and machine shop.....	3		2		2		2	28
Wisconsin Demokrat, Printing.....	1		5		5			
Total	47	7	76	3	79		13	831
CHIPPEWA FALLS, CHIPPEWA CO.								
Bresina, John, Wagons.....	1		5		5			
Brooks, H. L., Monuments.....	1		3		3			
Chippewa Boom & Logging Co.....	12		500		500		6	900
Chippewa Falls Canning Co.....	5		150		150		2	60
Chippewa Falls Creamery Co.....	1		5		5		1	5
Chippewa Falls Furniture Co.....	2		50		50		1	80
Chippewa Falls Water & Light Co.....	4		12	1	13		2	150
Chippewa Herald, Printing.....	1		6	3	9			
Chippewa Falls Printing Co.....		1	2		2			
Chippewa Falls Shoe Mfg. Co.....	1		50	10	60			
Chippewa Steam Laundry.....	1		3	12	15		1	15
Chippewa Sugar Co., Sugar factory.....	9	1	200		200		12	2,000
Chippewa Falls Woolen Mills.....	2		10	10	20		1	75
Clark, R. H., Elevator.....	2	1	7		7			
Consolidated Milling & Elevator Co.....	2	1	7		7			
Daily Independent.....	1		11	4	15			
Dumars, Geo., Marble Works.....	1		2		2			
Farmers Product Co., Elevator.....	1	1	3		3			
Filber & Mishfaldt, Wagons.....	1		5		5			
Gotzian, C. & Co., Shoes.....		1	73	27	100			
Hand Made Boot & Shoe Co.....	1		32	3	35			
Leinenkugel Brewing Co.....	10	2	30		30		2	100
Mandelert Mercantile Co., Woolen goods.....	1	1	5	6	11		1	35
North Wisconsin Mfg. Co., Wood-working.....	2		20		20		1	50
Pannier, E. G., Wagons.....	1		7	1	8			
Stanley, F. C. & C. A., Furniture..	9		84	1	85		2	70
Total	72	9	1,282	78	1,360		32	3,540
CLEARLAKE, POLK CO.								
Montania & McLennan, Creamery..	1		2		2		1	19
Northern Grain Co., Grain and hay.....		1	2		2			
Total	1	1	4		4		1	18

TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. F.
CLEVELAND, MANITOWOC CO.								
Cleveland Creamery Co.....	4		16	4	20	1	1	65
Total	4		16	4	20	1	1	65
CLINTONVILLE, WAUPACA CO.								
Clintonville Electric Light & Power Co.	1		1		1		2	160
Clintonville Mill & Improvement Co.	1	1	3		3		1	80
Clintonville Steam Laundry.....	1		1	3	4		1	8
Clintonville Tribune, Printing.....	1		3	4	7			
Gilt Edge Creamery.....	1		1		1		1	20
Rohrer Mfg. Co., Lumber.....	3		12		12		2	120
Zachow & Besserdick, Machine shop	3		3		3		1	15
Total	11	1	30	7	37		8	403
COLFAX, DUNN CO.								
Colfax Messenger, Printing.....	1		2		2			
Colfax Starch Co.....	1		6		6		1	60
Homer & Olson, Feed.....	1		2		2			
Northern Grain Co., Elevator.....	2	1	2		2			
Total	5	1	12		12		1	60
COLLINS, MANITOWOC CO.								
Empire Lime Co.....	4		20		20		1	50
Metallic Screen Co., Window screens	2		10		10		1	25
Standard Lime	2		26		26		1	20
Total	8		56		56		3	95
COLUMBUS, COLUMBIA CO.								
Brown & Udey, Flour and feed.....	2		3		3		1	60
Columbus Canning Co.....	2		33	12	50	8	2	120
Columbus Democrat, Printing.....	1		2		2			
Columbus Electric Light & Water Plant	1		3		3		2	160
Columbus Steam Laundry.....	1		3	5	8		1	15
Kneith Co., The, Brewery.....	3	7	30		30	6	2	300
Republican, The, Printing.....	1		4		4			
Roberts, G. D., & Son, Repair shop	7		5		5			
Total	16	7	88	17	105	14	8	655
COMBINED LOCKS, OUTAGAMIE CO.								
Combined Locks Paper Co.....	4	1	240	5	245		8	1,500
Total	4	1	240	5	245		8	1,500
CONOVER, VILAS CO.								
Coleman, N., Brick yard.....	1		12		12		1	60
Total	1		12		12		1	60

TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs of age.	No.	Total h. p.
COON VALLEY, VERNON CO.								
Cargill, W. W., Co, Elevator.....		1	1		1			
Central Wis. Creamery Co.....	1		2		2		1	12
Coon Valley News.....	1		1		1			
Coon Valley Roller Mill.....		1	4		4			
Throne, Albert, Wagons and sleighs	1		3		3			
Total	3	2	11		11		1	12
CORLISS, RACINE CO.								
Brown Corliss Engine Co., Engines	6		250		250		2	150
Total	6		250		250		2	150
COUDERAY, SAWYER CO.								
Couderay Lumber Co., Saw mill....	7		75		75		1	100
Total	7		75		75		1	100
CRANDON, FOREST CO.								
Bennett, W. B., Axhandles.....	1		10		10		1	50
Crandon Mfg. Co., Hubs and head- ings	5		50		50		2	200
Forest Republican, Printing.....	1		2	2	4			
Kempf, G. W., Planing mill.....	2		7		7		1	45
Page & Landeck, Lumber.....	6		128	2	130		3	300
Shaw Publishing Co.....	1		2	3	5			
Wisconsin Fruit Package Co., Boxes and baskets	3		34	7	41	4	1	80
Total	19		213	14	227	4	8	675
CUBA, GRANT CO.								
American Zinc & Lead Mining Co..	1		5		5			
Baxter Mining Co.....	1		30		30		3	200
Calumet Mining Co.....	2		12		12		2	100
Cuba City Creamery Co.....	1		2		2		1	60
Cuba City Lead Mill.....	1		1		1			
Cuba City Lead & Zinc Co.....	2		6		6		1	80
Cuba City News, Printing.....	1		3		3			
Doll Mining Co.....	1		50		50		3	250
Garrett Lead & Zinc Mining Co.....		1	5		5			
Gritty Six Mining Co.....	1		60		60		3	260
Meakers Grove Mining Co.....	1		4	1	5		1	60
Municipal Electric Light & Water Plant	1		1		1			
Reliable Mining Co.....	1		30		30		3	240
Rico Mining Co.....	1		6		6		1	100
Roosevelt Mining Co.....	1		16		16		1	100
Total	16	1	231	1	232		19	1,450
CUDAHY, MILWAUKEE CO.								
Cudahy Packing Co.....	5	12	305	25	330	39	16	3,200
Milwaukee Rubber Works Co.....	5		73	12	85	1	3	450
Milwaukee Vinegar Co., Vinegar and yeast	9	3	46		46		3	300
Power & Mining Machinery Co.....	12	2	635		635	4	4	430
Total	31	17	1,564	37	1,601	44	26	4,380

TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total L. P.
CUMBERLAND, BARRON CO.								
Beaver Dam Lumber Co., Saw mill.	3		85		85	4	3	240
Cole, David H., Stave and heading mill	4		20		20	5	1	125
Cumberland Advocate, Printing	1		5	1	6			
Cumberland Creamery	1		2		2		1	15
Cumberland Milling, Flour	4		5		5		1	100
Cumberland Water & Electric Light Plant	1		3		3		1	75
Free Press, Printing	1		2		2			
Neurer, A., Machine shop	1		2		2			
Total	16		124	1	125	9	7	555
DARLINGTON, LAFAYETTE CO.								
Badger State Mineral Water Co.	2		1		1			
Darlington Democrat, Printing	1		3		3			
Darlington Electric Light & Water Co.	4		3		3		1	150
Republican Journal, The, Printing	1		2	1	3			
Sauer, E. A., Feed mill	1		2		2		1	12
Total	9		11	1	12		2	162
DARTFORD, GREEN LAKE CO.								
Brooklyn Creamery Co.	1		1		1		1	20
Green Lake Boat Factory	1		2		2			
Green Lake County Reporter & Dartford Advance	1		2	1	3			
Green Lake Roller Mills, Flour	1		3		3			
Total	4		8	1	9		1	20
DEERBROOK, LANGLADE CO.								
Deerbrook Roller Mills	1	1	3		3		1	100
Britton, J. E., House moving rollers	1		3		3		1	20
Total	2	1	6		6		2	120
DEERFIELD, DANE CO.								
City Water Works	1		1		1			
Colton, C. L., Leaf tobacco	1		15	35	50			
Dorfield Creamery Co.	1		2		2		1	25
Deerfield News, The, Printing	1		2		2			
Roe, O. K., Leaf tobacco	1		16	34	50	1		
Simonson, Ole, Feed mill	1		2		2			
Simonson, S. E., Leaf tobacco	1		17	9	26	1		
Simonson & Erenson, Saw mill	1		5		5		1	18
Total	8		60	78	138	2	2	43
DEERPARK, ST. CROIX CO.								
Burkhardt Elevator, Grain and flour	1		2		2			
Deerpark Creamery	1		2		2		1	20
Northern Grain Co., Elevator		1	2		2			
Total	2	1	6		6		1	20

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TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
DELANAN, WALWORTH CO.								
Delavan Enterprise, Printing	1		3	3	6			
Delavan Frost Creamery	1		8		8		2	200
Delavan Milling Co.	1	1	4		4			
Delavan Republican, Printing	1		4	3	7			
Delavan Water Works	1		1		1		2	120
Globe Knitting Mills	2		20	40	60	1		
Hogg, N. W., Elevator and feed	1		4		4		1	30
Quigley, J., Creamery	1		2		2		1	40
Reader, J. B., Tanks and wind-mills	3		4		4			
West End Creamery	1		1		1		1	20
Total	13	1	51	46	97	1	7	410
DE PERE, BROWN CO.								
American Writing Paper Co.	11	3	135	145	280	12	4	500
Burns Boiler Works	1		5	2	7	1		
De Pere Democrat, Printing	4		75		75		1	200
De Pere Light & Power Co.	2		5		5			
De Pere Lumber & Fuel Co.	7		17	1	18		1	150
De Pere News, Printing	1		2	4	6	2		
De Pere Steam Laundry	1		2	1	3		1	8
De Pere Tablet Co.	1		2	2	4			
Dousman, J. P., Flour	4	2	20		20			
Hockers, John, Brick yard	1		20		20		1	32
Kidney & Sons, Boats	6		13		13		1	25
Oneida Knitting Co.	1		3	37	40			
Lawton, C. A. Co., The, Machine shop	10		75		75		2	110
Shattuck & Babcock, Writing paper	6	7	115	160	275	13	12	3,000
Standard Printing Co., Paper	1		4		4			
Volkstein, Die, Printing	1		5	2	7			
Wells, A. G. Co., The, Elevator	2	1	15	1	16		1	100
Western Steel Gate Co., Gates and post hole diggers	1		12	1	13			
Total	61	13	525	356	881	28	24	4,125
DERONDA, POLK CO.								
Deronda Creamery Co.	1		2		2		1	40
Total	1		2		2		1	40
DODGEVILLE, IOWA CO.								
Chronicle, The, Printing	1		3	3	6			
Dodgeville Electric Light & Power Co.	6		2		2		2	130
Dodgeville Roller Mill	1	1	2		2		1	50
Dodgeville Steam Laundry	1		6		6		1	15
Dodgeville Sun & Iowa Republican	1		2	2	4			
Esch Butter Tub Mfg. Co.	1		8		8			
Mitchell & Griffith, Creamery	3		4		4		1	20
Stratman, F. W., Wagons and carriages	4		15		15		1	30
Total	18	1	42	5	47		6	245
DORCHESTER, CLARK CO.								
Nelson & Berry, Shingles and staves	1		20		20		1	80
Paulson & Stephens, Lumber	2		35		35		2	100
Wells & Chase, Flour mill		1	4		4		1	65
Total	3	1	59		59		4	245

TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
DRUMMOND, BAYFIELD CO.								
Rust—Owen Lumber Co.	12	.....	150	.....	150	2	2	200
Total	12	.....	150	.....	150	2	2	200
DUNBAR, MARINETTE CO.								
Gerad Lumber Co.	6	.....	136	6	142	1	6	600
Total	6	.....	136	6	142	1	6	600
EAGLEPOINT, CHIPPEWA CO.								
Clark, R. B., Elevator .....	.....	1	1	.....	1	.....	.....	.....
Total .....	.....	1	1	.....	1	.....	.....	.....
EAGLE RIVER, VILAS CO.								
Eagle River Light & Power Co.....	1	.....	2	.....	2	.....	2	150
Total	1	.....	2	.....	2	.....	2	150
EAU CLAIRE, EAU CLAIRE CO.								
Ashbaugh Printing Co. ....	.....	1	2	.....	2	.....	.....	.....
Bergman, C. H., Elevator	2	.....	3	1	4	.....	.....	.....
Bonnell & Son, Wagons	2	.....	9	1	10	.....	.....	.....
Chippewa Valley Electric Ry. Power house	2	.....	3	.....	3	.....	2	300
Cutter, A. A., Shoes	1	.....	67	17	84	.....	.....	.....
Daily Leader, Printing	1	.....	25	5	30	.....	.....	.....
Dells Lumber & Shingle Co.	7	.....	249	1	250	.....	3	450
Dells Paper & Pulp Co.	13	1	328	17	345	1	7	1,400
Dickinson, J., Brooms	1	.....	3	.....	3	.....	.....	.....
Daniel Shaw Lumber Co.	13	.....	290	.....	290	2	6	950
Drummond Packing Co.	6	1	50	.....	50	.....	1	50
Dunphy Boat Works	1	.....	4	.....	4	.....	.....	.....
Eau Claire Bedding Co.	1	.....	12	4	16	.....	.....	.....
Eau Claire Boiler Works, Machine shop	1	.....	5	.....	5	.....	.....	.....
Eau Claire Box & Lumber Co., Boxes	7	.....	60	.....	60	22	2	150
Eau Claire Cornice & Heating Co... Eau Claire Gas Works	1	.....	7	1	8	.....	.....	.....
Eau Claire Light & Power Co.	2	.....	5	.....	5	.....	1	25
Eau Claire Linen Co., Linen goods	2	.....	4	.....	4	.....	4	320
Eau Claire Mill Supply Co., Log- ging machinery	4	1	7	45	52	2	1	40
Eau Claire Robe & Fur Tannery.... Eau Claire Trunk Co.	2	.....	10	.....	10	.....	.....	.....
Eau Claire Wagon & Carriage Works	1	.....	2	.....	2	.....	.....	.....
Eau Claire Water Works Co.	1	.....	13	4	17	.....	.....	.....
Fish, E. M. Co., Woodworking.... Fremad Publishing Co., Printing...	2	.....	11	1	12	.....	.....	.....
Half Moon Lake Shingles & Fuel Co., Saw mill	2	.....	2	.....	2	.....	3	240
Huebsch Laundry Co.	4	.....	59	1	60	.....	1	35
Kauppner & Bartlett Co., Wood- working	1	.....	4	3	7	.....	.....	.....
Kaiser Lumber Co., Box factory and saw mill	6	.....	50	.....	50	.....	5	240
Lake Side Elevator Co.	1	.....	12	56	68	.....	1	50
Lange Canning Co.	5	.....	65	.....	65	.....	1	25
Larson, C. P., Shoe Co.,	5	.....	75	.....	75	9	5	600
.....	3	.....	4	.....	4	.....	1	50
.....	10	.....	78	69	147	2	2	150
.....	1	.....	15	20	35	4	.....	.....

TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees,				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
EAU CLAIRE—Continued.								
Linderman Box & Veneer Co., Boxes	7	.....	75	.....	75	23	2	100
McDonough Mfg. Co., Iron works..	3	.....	115	.....	115	.....	.....	.....
Meador, R. L., Candy	1	.....	9	16	25	.....	.....	.....
Michel's Brewery	3	2	9	.....	9	.....	1	40
Northern Grain Co., Elevator	.....	1	4	.....	4	.....	.....	.....
Northwestern Iron & Steel Works, Gas engines	3	.....	20	.....	20	.....	.....	.....
Northwestern Lumber Co.	12	.....	120	.....	120	.....	6	300
Pauly Printing House	.....	2	3	2	5	.....	.....	.....
Phoenix Furniture Co.	4	.....	44	1	45	.....	1	80
Phoenix Mfg. Co., Saw mill machinery	11	.....	130	.....	100	.....	1	150
Pioneer Furniture Co.	4	2	75	.....	75	10	2	250
Ritchie-Clark Co., Furniture.....	1	1	15	.....	15	.....	1	60
Schroeder, W. A., Awnings	1	.....	3	.....	3	.....	.....	.....
Taylor Lumber Co.	6	.....	12	3	15	.....	.....	.....
Telegram Publishing Co.	1	.....	65	2	67	.....	3	500
Volkman, C., Bottling	1	.....	4	.....	4	.....	.....	.....
Walter, J. & Co., Brewery	8	1	14	.....	14	.....	1	100
Wisconsin Refrigerator Co.	4	.....	100	.....	100	.....	3	300
Total	181	13	2,320	270	2,590	75	67	3,955
EDGAR, MARATHON CO.								
Bauer, Frank, Machinist	1	.....	10	.....	10	.....	1	10
Edgar Bottling Works	1	.....	1	.....	1	.....	.....	.....
Hill, Thomas, Brick yard	1	.....	10	.....	10	.....	1	25
Quaw Lumber Co., Saw and planing mill	6	.....	60	.....	60	.....	4	140
Total	9	.....	81	.....	81	.....	6	175
EDGERTON, ROCK CO.								
American Cigar Co., Leaf tobacco..	4	.....	160	90	250	4	.....	.....
Bamberger, L., Leaf tobacco	.....	1	28	86	114	3	.....	.....
Berg, Ole, Leaf tobacco	1	.....	40	.....	40	.....	.....	.....
Burge, F. F., Machinery	1	.....	4	.....	4	.....	.....	.....
Childs, H. W., Leaf tobacco	1	.....	24	52	76	4	.....	.....
City Steam Laundry	1	.....	2	1	3	.....	1	10
Conway & Hubbell, Leaf tobacco..	1	.....	46	12	58	1	.....	.....
Conway Bros., Leaf tobacco	1	.....	10	32	42	1	.....	.....
Coulton & Weil, Leaf tobacco	1	.....	100	20	120	.....	.....	.....
Edgerton Eagle, The Printing	1	.....	2	.....	2	.....	.....	.....
Edgerton Machine Works, Machinist	1	.....	2	.....	2	.....	.....	.....
Eisenlohr, Otto & Bros., Leaf tobacco	1	.....	25	40	65	.....	.....	.....
Heddles Lumber Co., Boxes	1	.....	15	.....	15	.....	.....	.....
Hoen, Andrew, Leaf tobacco	1	.....	35	.....	35	.....	.....	.....
Jensen, Andrew & Sons, Leaf tobacco	1	.....	63	19	82	.....	.....	.....
Leary, Joseph, Leaf tobacco	1	.....	20	.....	20	.....	.....	.....
Mabbett, C. F., Leaf tobacco	1	.....	14	38	52	.....	.....	.....
McIntosh Bros., Leaf tobacco	1	.....	33	42	75	.....	.....	.....
Madden Bros., Leaf tobacco	1	.....	15	5	20	.....	.....	.....
Marsden & Watson, Wagons	1	.....	3	.....	3	.....	.....	.....
Meyer & Mendelson, Leaf tobacco	1	.....	50	22	72	.....	.....	.....
Nelsons, Nels, Leaf tobacco	1	.....	15	25	40	.....	.....	.....
Perry & Pearson, Leaf tobacco	1	.....	10	.....	10	.....	.....	.....
Pomeroy, W. T., Leaf tobacco	1	.....	25	8	33	.....	.....	.....
Scott, L. W., Leaf tobacco	1	.....	8	33	40	.....	.....	.....
Spitzner, C. H. & Son, Leaf tobacco	1	.....	23	60	83	4	.....	.....
Sweeney, H. T., Leaf tobacco	1	.....	20	.....	20	.....	.....	.....

TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs of age.	No.	Total h. p.
EDGERTON—Continued.								
Tsenlohr, Otto, Leaf tobacco	2	.....	91	36	127	.....	.....	.....
United Cigar Mfg., Leaf tobacco	1	.....	101	59	160	.....	.....	.....
Whittet, D. C., Feed	1	.....	3	.....	3	.....	.....	.....
Wilson Bros., Patent medicines .....	.....	1	12	4	16	.....	.....	.....
Wisconsin Tobacco Reporter, Printing	1	.....	4	.....	4	.....	.....	.....
Total	34	2	1,003	683	1,686	17	1	10
ELKHART, SHEBOYGAN CO.								
Brickbrauer, P. W., Elevator .....	.....	1	1	.....	1	.....	.....	.....
Laun Bros., Elevator .....	.....	1	2	.....	2	.....	.....	.....
Total .....	.....	2	3	.....	3	.....	.....	.....
ELKHORN, WALWORTH CO.								
Blade, The, Printing	1	.....	1	1	2	.....	.....	.....
Elkhorn Electric Light & Water Co.	2	.....	3	.....	3	.....	2	160
Elkhorn Independent, Printing .....	.....	1	5	4	9	.....	.....	.....
Elkhorn Lumber Co., Feed mill	1	.....	8	.....	8	.....	1	85
Elkhorn Lumber Co., Elevator	2	1	7	.....	7	.....	1	40
Elkhorn Planing mill	1	.....	3	.....	3	.....	1	30
Elkhorn Steam Laundry	1	.....	2	3	5	.....	1	10
Opitz, Fred, Carriages	3	.....	9	.....	9	.....	1	15
Wisconsin Butter & Cheese Co.	1	.....	5	.....	5	.....	1	40
Zwiebel & Grebel, Repair shop	3	.....	3	.....	3	.....	1	35
Total	15	2	46	8	54	.....	9	410
ELKMOUND, DUNN CO.								
Wisconsin Elevator Co.	1	1	2	.....	2	.....	.....	.....
Carghill, W. W., Elevator	1	.....	1	.....	1	.....	.....	.....
Elkmond Creamery	1	.....	2	.....	2	.....	1	12
Total	3	1	5	.....	5	.....	1	12
ELLSWORTH, PIERCE CO.								
Ellsworth Light, Heat & Power Co.	1	.....	3	.....	3	.....	1	150
Ellsworth Mfg. Co., Saw mill	1	.....	15	.....	15	.....	2	80
Ellsworth Record, Printing	2	.....	2	.....	2	.....	.....	.....
Hines, F. W., Elevator .....	.....	1	3	.....	3	.....	.....	.....
Milbourn Dairy Co., Creamery	1	.....	2	.....	2	.....	1	25
New Richmond Roller Mills Co. ....	.....	1	3	.....	3	.....	.....	.....
Pierce County Herald, Printing	1	.....	3	.....	3	.....	.....	.....
St. Paul Milk & Dairy Co., Creamery	2	.....	2	.....	2	.....	1	20
Total	7	2	33	.....	33	.....	5	275
ELMGROVE, WAUKESHA CO.								
Elmgrove Feed mill	1	.....	1	.....	1	.....	.....	.....
Total	1	.....	1	.....	1	.....	.....	.....
ELMWOOD, PIERCE CO.								
Elmwood Creamery	1	.....	2	.....	2	.....	1	16
Total	1	.....	2	.....	2	.....	1	16

TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No	Total h. p.
ELROY, JUNEAU CO.								
Avary, F. W., Machinist.....	1		1		1			
Chicago, St. Paul, Minneapolis & Omaha Ry., Round house.....	4		43		43		3	180
De Long, R. M., Flour and feed....	1	1	3		3		1	30
Elroy Leader, The, Printing.....	1		1	1	2			
Elroy Tribune, The, Printing.....	1		2		2			
McNowne, Geo., Contractor.....	1		1		1		1	30
Minneapolis Electric Light & Water Works	1		3		3		2	230
Ruby Steam Laundry.....	1		3	3	6			
Total	11	1	57	4	61		7	470
EVANSVILLE, ROCK CO.								
Baker Mfg. Co., Engines and pumps	13		98		98		2	250
Baldwin Bros., Feed.....	2		1		1			
Barnard & Wilder, Leaf tobacco....	2		10	36	46			
Brand, John, & Co., Leaf tobacco	1		14	34	48			
Enterprise & Tribune, The, Printing	1		4		4		1	5
Evansville Steam Laundry.....	1		1	3	4			
Evansville Water & Light Co.....	1		2		2		2	200
Heddles, D. F., Leaf tobacco.....	1		45		45			
Lovejoy Lumber Co., Boxes.....	1		2		2			
Review, The, Printing.....	1		3	2	5			
Rumville, G. H., Leaf tobacco.....	3		10	28	38			
Smith, E. E., Leaf tobacco.....	1		4	20	24	1		
Wood, D. E., Butter Co., Creamery and butter renovating.....	5	1	20		20		3	205
Total	33	1	214	123	337	1	8	660
FAIRCHILD, EAU CLAIRE CO.								
Brookside Creamery	1		1		1		1	20
Foster, W. C., Lumber Co., Elevator and grist mill.....	2		2		2		1	150
Foster, W. C., Lumber Co., Electric light plant.....	1		1		1		2	100
Observer, The, Printing.....	1		1	3	4			
Total	5		5	3	8		4	270
FENNIMORE, GRANT CO.								
Buderman & Sheedy, Wagons	1		5		5			
Farmers Mutual Cooperation, Creamery	1		1		1		1	15
Fennimore Creamery	1		1		1			
Fennimore Light & Water Co.....	2		2		2		1	125
Fennimore Times	1		4	1	5			
Hinn Bros., Flour and feed.....	2		2		2		1	40
Total	8		15	1	16		3	180
FLORENCE, FLORENCE CO.								
City Light & Water Plant.....	1		2		2		2	200
Commonwealth Iron Co., Mining....	5		40		40		5	500
Florence Butter & Cheese Co.....	1		1		1		1	150
Florence Iron Co., Mining.....	11		200		200		4	330
Florence Mining News.....	1		3		3			
Total	19		246		246		12	1,210

TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
FOND DU LAC, FOND DU LAC CO.								
Able Brothers, Machine shop.....	1		2		2			
Adrian, Frank, Machine shop.....	1		2		2			
American Chemical Co., Patent medicine	1		2	5	7			
Badger Sewing Co., Jackets and overalls	2		15	100	115	5	2	200
Bechaud Brewing Co.....	4	1	12		12		3	150
Bowen Mfg. Co., Refrigerators.....	4		100		100			
Bulletin Printing Co.....	1		20	6	26	1		
Castle-Pierce, Printing Co.....	1		15	5	20			
Crescent Laundry	2		1	5	6			
Daily Commonwealth, Printing.....		1	22	13	35		1	20
Eastern Wis. Ry. Light & Power Co., Light and power.....	3		300	6	306		5	2,350
Eastern Wis. Ry. Light & Power Co., Gas	5		7		7		2	100
Eureka Laundry Co.....		1	5	10	15		1	20
Fond du Lac Awning & Tent Co....		1	6	18	24			
Fond du Lac Blank Book Co., Ptg.	1		8		8			
Fond du Lac Church Furniture Co.	1		4		4			
Fond du Lac Tile Co.....	1		1		1		1	35
Fond du Lac Implement Co.....	4	1	12		12		1	40
Fond du Lac Malt & Grain Co.....	2	3	10		10		1	80
Fond du Lac Pressed Brick Co.....	3		40		40		1	150
Fond du Lac Shirt & Overall Co....		1	13	68	81	5		
Fond du Lac Steam Laundry.....	1		7	20	27		1	40
Fond du Lac Table Mfg. Co.....	2		55		55	5	2	300
Fond du Lac Water Works.....	1		4		4		2	150
Gieling & Lewis, Saw mill machinery	4		65		65		1	80
Graham Awning Co., Awnings and blankets	1		2	3	5			
Grant, F. W., Broom Co.....	1		8	3	11			
Gurney Refrigerator Co.....	5	3	180		180	8	3	255
Haase, H. E., Gas engines.....	1		3		3			
Haber, P. B. Printing Co.....		1	15	15	30	1		
Helmer Milling Co., Feed.....	4	1	5		5		2	175
Holman Candy Co.....		1	29	33	62	7	1	100
Huber & Fuhrmann Drug Co.....	5		16	4	20		1	125
Moore-Galloway Lumber Co.....	7		200	1	201		1	150
National Stock Food Co.....		1	7	1	8			
Nehrbars Casket Co.....		1	29	4	33		1	150
Northwestern Car Shops.....	6		75		75	3	2	160
Northwestern Courier, Printing.....	1		4	2	6			
Pope Mfg. Co., Boats.....	1		5		5			
Quentin, P. N., Repair shops.....	1		2		2			
Reporter Printing Co.....		1	25	2	27	2		
Rueping, Fred, Leather Co.....	13	4	400		400	6	6	500
Sander Bros., Brewery.....	3	1	5		5		1	30
Steinberg, O. C., Sash, doors and blinds	7	1	40		40		1	125
Wells, M. D. Co., Shoes.....	1	1	300	150	450	24	2	100
Swett, B. F. & H. H., Sleighs and wagons	7		40		40		1	150
Winnebago Furniture Mfg. Co.....	4	3	250		250	20	1	150
Wisconsin Central Shops.....	10	1	500		500		4	400
Wisconsin Envelope & Box Co.....	1		13	12	25			
Wisconsin Mirror & Plate Glass Co.	1		23		23		1	50
Total	125	29	2,894	486	3,380	37	52	6,355

TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
FOREST JUNCTION, CALUMET CO.								
Cargill Grain Co., Elevator.....		1	4		4			
Total		1	4		4			
FORT ATKINSON, JEFFERSON CO.								
City Brewery	2				5		1	35
City Water & Light Plant.....	3		5		7		2	300
Cornish, Curtis & Green, Dairy supplies	4	1	180	1	181		2	100
Fort Atkinson Creamery Co.....	4		39	11	50	3	1	60
Fort Atkinson Steam Laundry.....	1		4	3	7		1	15
Hoard's Creamery	4	1	8	3	11		2	40
Hoard's Dairyman & Jefferson Co. Union	4		25	25	50		1	70
Jones Dairy Farm, The, Sausage	1		21	4	25		1	40
Landgraf & Wandschneider, Repairing	1		4		4			
Northwestern Mfg. Co., Wagons and sleighs	12	2	240		240		3	245
Pounder, Geo., Harrows.....	4		8		8		1	20
Wilcox Lumber Co., Elevator.....	2	2	4		4		1	25
Zengner & Hoffman Lumber Co. Elevator	2	1	5		5		1	40
Total	44	7	550	47	597	3	17	980
FOUNTAIN CITY, BUFFALO CO.								
Alert Mill, Flour.....	1	1	4		4		1	65
Bohrn, F. & Sons, Elevator.....		1	1		1			
Buffalo Co. Republikaner, Printing	1		4		4			
Dressendorfer, A., Wagons	2		4		4		1	12
Fountain City Cooperative Creamery Co.	1		3		3		1	15
Fountain City Bottling Works.....	1		1		1			
Fountain City Brewing Co.....		1	5		5		1	60
Roettiger, H. F., Contractor.....	1		12		12		1	80
Total	7	3	34		34		5	282
FOXLAKE, DODGE CO.								
Clausen H., Elevator.....	1	1	3		3		1	20
Foxlake Brewing Co.....	1		5		5		1	20
Foxlake Gas Plant.....	1		1		1			
Foxlake Mills		1	4		4			
Porter & Proctor, Elevator.....	1		2		2			
Total	4	2	15		15		2	40
FREDERIC, POLK CO.								
Frederic Hoop Factory.....	1		20		20		1	80
Grimh Bros., Flour.....		1	4		4		1	40
Levath Lumber Co.	1		40		40		2	80
Minneapolis Co-operative Barrel Co., barrel staves	1		25		25		2	60
Total	3	1	89		89		6	260

TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
FREMONT, WAUPACA CO.								
Fremont Creamery	1	.....	1	.....	1	.....	1	12
Steiger, J. J., Saw and planing mill	1	.....	3	.....	3	.....	1	25
Total	2	.....	4	.....	4	.....	2	37
GAGEN, ONEIDA CO.								
Minneapolis Cedar & Lumber Co.	4	.....	65	.....	65	.....	3	250
Total	4	.....	65	.....	65	.....	3	250
GALESVILLE, TREMPLEAU CO.								
Arctic Springs Co., Creamery	2	.....	2	.....	2	.....	1	15
Galesville Independent, Publishing.	1	.....	2	.....	3	.....	.....	.....
Galesville Milling Co., Flour and light	1	1	6	1	7	.....	.....	.....
Galesville Republican, Publishing...	1	.....	2	.....	2	.....	.....	.....
High Cliff Wagon Works	1	.....	2	.....	2	.....	.....	.....
Northern Grain Co., Elevator .....	.....	1	2	.....	2	.....	.....	.....
Ball, Geo., Mfg. Co., Sash, moldings, etc.	2	.....	5	.....	5	.....	1	50
Total	8	2	21	2	23	.....	2	65
GAYS MILLS, CRAWFORD CO.								
Pomroy, O. R., Tobacco warehouse	1	.....	25	29	54	.....	.....	.....
Total	1	.....	25	29	54	.....	.....	.....
GENOA JUNCTION, WALWORTH CO.								
Borden's Condensed Milk Co.	4	.....	43	.....	43	.....	3	210
Burgett Bros., Feed and grist	1	.....	2	.....	2	.....	2	76
Cary, J. M., Feed and grist	1	.....	4	.....	4	.....	.....	.....
Gibbs, H. A., Ice cream	1	.....	2	.....	2	.....	.....	.....
Total	7	.....	51	.....	51	.....	5	286
GLENDALE, MONROE CO.								
Baldwin, F. E., Elevator	1	.....	1	.....	1	.....	.....	.....
Glendale Co-op Creamery	2	.....	1	.....	1	.....	1	20
Glendale Roller Mills, Flour	2	.....	2	.....	2	.....	1	50
Total	5	.....	4	.....	4	.....	2	70
GLENWOOD, ST CROIX CO.								
Glenwood Creamery	2	.....	2	.....	2	.....	1	20
Total	2	.....	2	.....	2	.....	1	20
GLIDDEN, ASHLAND CO.								
Glidden Veneer Co.	8	.....	100	.....	100	.....	4	450
Kern, G. H., Staves	2	.....	18	.....	18	.....	2	100
Rogers & Emmons Lumber Co.	1	.....	40	.....	40	.....	2	150
Sells, Geo., Shingles	1	8	8	1	40
Tyler, D. F., Water and light	1	1	1	1	60
Total	13	167	167	13	800

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TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
GRAFTON, OZAUKEE CO.								
Badger Woolen Mill, Yarn	3	1	14	28	42	4	1	8
Grafton Brewing Co.	6		4		4		1	8
Grafton Roller Mill, Flour		1	4		4			
Total	9	2	22	28	50	4	2	16
GRAND RAPIDS, WOOD CO.								
Badger Box & Lumber Co., Boxes.	5		62		62	6	1	150
Baumgartner's Laundry	1		1	4	5	1		
Centralia Pulp and Water Power Co.	6		65	5	70	1	3	300
Chambers Creamery Co.	1		2		2			
Consolidated Water Power Co., Paper	7	1	160	9	169		3	900
Grand Rapids Brewing Co.	3	1	14		14		1	80
Grand Rapids Electric Light & Water Co.	1		4		4		2	175
Grand Rapids Foundry Co.	2		16	1	17			
Grand Rapids Lumber Co., Saw mill	9		90		90	3	6	350
Grand Rapids Milling Co., Flour and feed	2	2	14		14			
Grand Rapids Pulp & Paper Co.	6		98		98	1		
Grand Rapids Sash & Door Co.	2		6		6		1	80
Grand Rapids Table Co.	2	2	16	2	18		1	65
Grand Rapids Tribune, Publishing	1		3	2	5			
Krueger, G. F. & Co., Machine shop	1		1		1			
Krueger & Nelson, Roring tools	1		2		2			
McKennon, F., Mfg. Co., Hubs, spokes, etc.	14	1	60		60		1	110
Overbeck Bros., Mfg. Co., Furniture	6	2	141	8	149	2	3	225
Pioneer Wood Pulp Co.	5		15		15		2	70
Riverside Steam Laundry	1		2	4	6			
Wis. Valley Leader, Publishing....	1		1	4	5			
Wood County Reporter, Publishing.	1		3	4	7			
Total	78	9	779	43	822	14	28	3,105
GRANTSBURG, BURNETT CO.								
Grantsburg Brickyard	1		20		20		1	40
Grantsburg Excelsior Mill	1		11		11		1	40
Grantsburg Roller Mills, Flour....		1	5		5			
Total	2	1	36		36		2	80
GREENBAY, BROWN CO.								
Akins Steam Laundry	2		3	5	8		1	50
Allouez Mineral Spring Co., Water	2	1	19	1	13			
American Laundry	2		3	7	10		1	40
American Wood Working Machine Co.	4		70		70		1	75
Annen Candy & Biscuit Co.	2	2	42	58	100		1	65
Automatic File & Index Co.	2	1	7	1	8			
Badger Invalid Bed Co.	2		4		4			
Barkhausen Brick & Tile Co.	4		25	1	26		1	65
Brenner, Gazette Co., Candies		1	20	50	70		1	40
Britton, D. W., Cooperage Co.	11		150		150	4	2	120
Burns Boiler Works	2		25	1	26		1	45
Cargill Coal Co.	6	1	77	1	78		3	450
Cargill, W. W., Co., Grain	7	2	29	1	30		3	110
C. M. & St. P. Ry., Repair shops..	17		214		214		2	200

TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
GREEN BAY—Continued.								
Diamond Match Co.	1	.....	45	.....	45	.....	.....	.....
Dickmann Mfg. Co., Sash and doors	10	.....	35	.....	35	.....	1	100
Duncan, A. M., Machine shop	2	.....	10	1	11	.....	1	15
Duncan Fuel Co., Coal yard	3	1	15	1	16	.....	1	75
Ebelinge, J. H., Milling Co., Flour	6	1	20	.....	20	.....	2	160
Flatley Bros. Co., Coal	3	.....	6	.....	6	.....	2	10
Fox River Soap Co.	3	.....	16	4	20	.....	2	65
Green Bay Advocate, Publishing....	1	.....	20	2	22	.....	.....	.....
Green Bay Carriage Co.	6	.....	22	.....	22	.....	.....	.....
Green Bay Horse Collar Co.	1	.....	4	.....	4	.....	.....	.....
Green Bay Cornice & Corrugated Iron Co.	4	.....	24	.....	24	.....	.....	.....
Green Bay Electric Light & Gas Co.	6	.....	40	.....	40	.....	4	750
Green Bay Foundry & Machine Co.	6	.....	35	1	36	.....	.....	.....
Green Bay Gazette, Publishing	1	.....	41	12	53	.....	.....	.....
Green Bay Light & Power Co.	4	.....	7	.....	7	.....	3	625
Green Bay Machine Co., Gasoline engines	2	.....	10	.....	10	.....	.....	.....
Green Bay Mfg. Co., Chairs	4	.....	12	.....	12	.....	.....	.....
Green Bay Paper & Fiber Co.	9	1	75	.....	75	.....	7	1,350
Green Bay Planing Mill, Sash and doors	7	1	42	.....	42	.....	1	125
Green Bay Pure Milk Co.	4	.....	16	.....	16	.....	1	40
Green Bay Printing Co.	1	.....	4	1	5	.....	.....	.....
Green Bay Soap Co.	3	.....	6	1	7	.....	1	35
Green Bay Traction Co.	7	.....	114	1	115	.....	3	1,000
Green Bay Water Co.	6	.....	6	.....	6	.....	5	350
Green Bay & Western Ry., Repair shops	14	.....	75	.....	75	.....	2	150
Hagemeister Brewing Co.	12	2	29	1	30	.....	2	200
Handlen, J. J., Mineral water	4	.....	6	.....	6	.....	1	15
Hashek, John, Church furniture....	2	.....	8	.....	8	.....	.....	.....
Hess, G. B. Co., Flour mill	5	1	13	1	14	.....	1	75
Hoberg, John & Co., Toilet paper..	9	1	92	25	117	.....	6	1,100
Hochgear Brewing Co.	12	.....	12	.....	12	.....	2	225
Holt, M. D. Co., Medicine	1	1	4	6	10	.....	.....	.....
Holt Lumber Co., Saw mill	9	.....	300	.....	300	.....	6	1,240
Hudson & Schay, Machine shop....	4	.....	8	.....	8	.....	1	30
Kemnitz Furniture Co.	9	2	140	1	141	.....	2	150
Kress, Frank T., Horse collars....	2	.....	5	.....	5	.....	.....	.....
Larson Canning Co.,	10	.....	50	100	150	.....	2	120
Manger, E. C. & Son Co., Caskets.	5	1	23	2	30	.....	1	65
Manthey, Carl, Marble works	1	.....	10	.....	10	.....	.....	.....
Maynard, Drachmans Co., Printing	.....	1	23	2	30	.....	.....	.....
Milwaukee Sander Co., Sanding machines	9	.....	90	.....	90	.....	1	75
Mueller Bros., Sash and doors	7	.....	20	.....	20	.....	1	100
Murphy Box Co., Wooden boxes....	4	.....	70	.....	70	.....	2	150
Murphy Lumber Co., Saw mill....	10	.....	140	.....	140	.....	6	1,200
Northern Harness & Saddle Co....	2	.....	15	1	16	.....	.....	.....
Northern Paper mill	5	.....	42	9	52	.....	3	500
Northern Tissue Paper Mill	4	.....	39	11	50	.....	3	500
O'Leary Bros., Boilers	1	.....	10	.....	10	.....	1	20
Bahr's, Henry, Sons Co., Brewing.	10	3	43	.....	43	.....	2	285
Riemer Bros., Shoe Co.	1	.....	25	15	40	.....	.....	.....
Rice, Vroman Co., Wooden boxes..	7	.....	100	.....	100	.....	3	375
Rothe, Jos. T., Foundry	3	.....	13	.....	13	.....	.....	.....
Salvator Mineral Spring, Mineral water	2	.....	5	.....	5	.....	.....	.....
Star Mills, The, Flour and feed....	3	1	15	1	16	.....	1	75
Straubel Machine Co., Machine shop	2	.....	10	.....	10	.....	.....	.....
Union Steam Laundry	1	.....	2	5	7	.....	1	40
Van Dyck Brewing Co.	11	.....	15	.....	15	.....	1	75

TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total b. p.
GREEN BAY—Continued.								
Wainwright Glove Co.	1		10	40	50			
Western Coal Co.	4		9		9		3	325
Woelz, F. W., & Bro., Paper boxes	1		3	8	11			
Total	344	25	2,791	378	3,169	13	105	12,380
GREENWOOD, CLARK CO.								
Greenwood Creamery	1		1		1		1	16
Greenwood Gleaner, Publishing	1		2	1	3			
Greenwood Roller Mills, Flour	1	1	3		3		1	60
Kippenhaur, Christ., Staves and headings	2		13		13	1	2	110
Total	5	1	19	1	20	1	4	186
HACKLEY, VILAS CO.								
Hackley Cooperage Co.	2		25		25		1	150
Hackley, Phelps, Bonnell Co., Lumber	3		125		125	1		
Wisconsin Chemical Co., Alcohol	2		40		40		3	450
Total	8		190		190	1	4	600
HAMMOND, ST. CROIX CO.								
Hammond Creamery	1		2		2		1	20
Total	1		2		2		1	20
HANCOCK, WAUSHARA CO.								
Cochran, T. H. Co., Elevator	1		1		1			
Hancock News, Publishing	1		2	1	3			
Kretzer, J. L., Machine shop	1		4		4		1	14
Thurston, Bert, Feed mill	1		1		1			
White, R. H., Feed mill	1		1		1			
Total	5		9	1	10		1	14
HARTFORD, WASHINGTON CO.								
Badger Laundry	1		2	2	4		1	29
Bellach, C. H. Co., Clothing	1		78	45	123		1	80
Dietzler, T. & Co., Bottling works	1		2		2		1	18
Gilt Edge Creamery	1		2		2		1	15
Grunan, J. A., Elevator	1		2		2			
Hartford Electric Light Co.	1		1		1			
Hartford Machine Co., Machine shop	1		1		1			
Hartford Plow Co.	4		42		42		1	89
Hartford Press, Publishing	1		2		2			
Hartford Roller Mill, Flour	1		3		3			
Hartford Tannery	1		2		2		1	20
Hartford Times, Publishing	1		6		6			
Hartford Waterworks	1		1		1			
Koward Bros. & Werner, Malt house	1	1	8		8		2	135
Lauenstein, A. G., Malt house	1		6		6		2	100
Place, W. B., & Co., Tannery	1	1	11	1	12		1	27
Portz Bros. Malt & Grain Co.	2		6		6		2	110
Schwartz, Jos., & Co., Brewery	2	1	10		10		1	45
Urber Bros., Tannery	1		12		12		1	89
Total	20	5	197	48	245		15	723

TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
HAUGEN, BARRON CO.								
Ben Lake Creamery.....	1		2		2		1	15
Urbanck, Frank, Shingle mill.....	1		4		4		1	12
Waller, John, Saw mill.....	1		15		15		1	75
Total	3		21		21		3	102
HAWTHORNE, DOUGLAS CO.								
Bonnell, W. H., Saw mill.....	2		40		40		3	180
Duluth Logging Co., Shingle mill...	1		12		12		1	50
Total	3		52		52		4	230
HAYWARD, SAWYER CO.								
City Waterworks	1		3		3		2	100
Diamond Match Co., Match blocks	1		55		55	13		
Hayward Republican, Publishing...	1		2		2			
Hines Lumber Co.....	4		360		360	9	5	600
New Richmond Roller Mills, Elevator	2		3		3		1	50
Sawyer County Record, Publishing	1		3		3			
Total	10		426		426	27	8	750
HAZELGREEN, GRANT CO.								
Big Dad Mining Co.....	1		5		5		1	45
Hazelgreen Mining Co.....	1		51		51		2	200
Kennedy Mining Co.....	1		46		46		4	225
Little Dad Mining Co.....	1		5		5		1	40
Miller Mining & Reduction Co.....	1		57		57		3	400
Murphy Mining Co.....	1		40		40		3	325
Square Deal Mining Co.....	1		52		52		4	320
Total	7		256		256		18	1,555
HAZELHURST, ONEIDA CO.								
Yawkee-Bissell Lumber Co., Saw mill	15		193		193	2	5	650
Total	15		193		193	2	5	650
HEINEMAN, LINCOLN CO.								
Heineman Lumber Co.....	7		125		125		5	425
Total	7		125		125		5	425
HIGHLAND, IOWA CO.								
Highland Mining Co.....	5		46		46		2	250
Highland Weekly Press, Publishing	1		2	2	4			
Leonard & Push Brewing Co.....	3	1	8		8		2	110
Total	9	1	56	2	58		4	360

TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				B ilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
HILBERT, CALUMET CO.								
Cargill, W. W., Co., Elevator.....	1	.....	1	.....	1	.....	.....	.....
Hilbert Cheese Box Co.....	3	.....	15	.....	15	.....	1	75
Hilbert Gasoline Light Co.....	1	.....	1	.....	1	.....	.....	.....
National Cabinet Co., Meat blocks..	3	.....	4	.....	4	.....	1	100
Wisconsin Malt & Grain Co., Elevator	1	.....	1	.....	1	.....	.....	.....
Total	9	.....	22	.....	22	.....	2	175
HILES, FOREST CO.								
Foster—Whitman Lumber Co.	3	.....	90	.....	90	.....	5	450
Total	3	.....	90	.....	90	.....	5	450
HILLSBORO, VERNON CO.								
Hillsboro Brewery	3	.....	1	.....	1	.....	1	40
Hillsboro Creamery	1	.....	2	.....	2	.....	1	40
Hillsboro Handle Works, Broom-handles	1	.....	11	.....	11	.....	1	60
Hillsboro Milling Co., Grist	1	1	5	1	6	.....	1	50
Hillsboro Sentry-Enterprise, Publishing	1	.....	2	.....	2	.....	.....	.....
Lind Lumber Co., Planing mill.....	2	.....	2	.....	2	.....	1	60
Total	9	1	23	1	24	.....	5	250
HORICON, DODGE CO.								
Firehammer, S. Co., Woodwork ...	1	.....	14	.....	14	.....	1	20
Horicon Gas Plant	1	.....	1	.....	1	.....	.....	.....
Horicon Laundry	1	.....	1	1	2	.....	1	8
Horicon Reporter, Publishing	1	.....	2	.....	2	.....	.....	.....
Horicon Wagon Works	2	.....	8	.....	8	.....	.....	.....
Horicon Windmill Co.	1	.....	3	.....	3	.....	.....	.....
Van Brunt Mfg. Co., Farm implements	5	.....	225	.....	225	.....	2	100
Total	12	.....	254	1	255	.....	4	128
HORLICKSVILLE, RACINE CO.								
Fox Lime & Stone Co.	1	.....	25	.....	25	.....	2	100
Horlick, J. A., Feed mill	1	.....	2	.....	2	.....	.....	.....
Horlick Stone & Lime Co.	1	.....	75	.....	75	.....	1	80
Total	3	.....	102	.....	102	.....	3	180
HORTONVILLE, OUTAGAMIE CO.								
Buchman Bros., Flour and feed ...	4	1	3	.....	3	.....	1	35
Dabareiner, L. & Co., Creamery....	2	.....	2	.....	2	.....	1	20
Diestler Co., The, Lumber	5	1	10	.....	10	.....	1	85
Diestler Co. Ltd., The, Planing mill	2	.....	5	.....	5	.....	1	85
Hortonville Brewing Co.	4	1	3	.....	3	.....	1	25
Hortonville Creamery	1	.....	2	.....	2	.....	1	60
Hortonville Review, Publishing	1	.....	2	.....	2	.....	.....	.....
Weiss, Albert, Cabinet work	1	.....	1	.....	1	.....	1	5
Total	20	3	28	.....	28	.....	7	315

TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs of age.	No.	Total h. p.
HOULTON, ST. CROIX CO.								
East Side Lumber Co.	7		250		250		4	500
Total	7		250		250		4	500
HOWARDS GROVE, SHEBOYGAN CO.								
Frame, R. L., Mfg. Co., Cheese boxes	4		18		18		1	60
Total	4		18		18		1	60
HUDSON, ST. CROIX Co.								
Anderson Lumber Co.	3		18		18			
Cassanova Brewing Co.	2	1	6		6		1	20
Central Lumber Co., Saw mill.....	1		150	1	151		5	250
Hudson Bottling Works	1		2		2			
Hudson Star-Times, Publishing.....	1		3	2	5			
Omaha Ry. Co., Repair shop	6		300		300		4	400
St. Croix Observer	1		3	1	4			
Total	15	1	482	4	486		10	670
HURLEY, IRON CO.								
Germania Mine	1		50		50		1	5
Lambert, M., Boiler shop	1		4		4			
Twin City Iron Mines	2		8		8			
Total	4		62		62		1	5
INDEPENDENCE, TREMPLEAU CO.								
Cargill, W. W. Co., Elevator.....		1			1			
Cooke, L. P., Sleds	1		2		2		1	8
Independence Co-op. Creamery Co.	1		1		1		1	10
Independence Roller Mill, Flour.....		1	4		4			
Liver & Porgenson, Elevator	1		1		1			
Sprecher, John, Elevator	3		1		1			
Total	6	2	10		10		2	18
IOLA, WAUPACA CO.								
Frogner Bros., Planing Mill	1		4		4		2	70
Iola Creamery Ass'n	1		2		2			
Iola Ideal Laundry	1		2	2	4			
Wipf, J. & Co., Flour		1	4		4		1	75
Total	3	1	12	2	14		3	145
IRON RIVER, BAYFIELD CO.								
Iron River Creamery	1		2		2		1	25
Iron River Water, Light and Power Co.	1		2		2		2	150
Iron River Lumber Co.	4		250		250	4	6	400
Iron River Pioneer, Publishing	1		2		2			
Valley Lumber Co., Saw mill	1		25		25		1	80
Total	8		281		281	4	10	655

FACTORY INSPECTION.

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TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
IRVINGTON, DUNN CO.								
Coffins Box & Lumber Co., Boxes, baskets, etc.	6	.....	100	.....	100	4	3	140
Total	6	.....	100	.....	100	4	3	140
ITASKA, DOUGLAS CO.								
C., St. P., M. & O. Ry. Co., Car shops	7	1	50	.....	50	.....	3	225
Nye-Jenks Grain Co., Elevator	3	.....	130	.....	130	.....	4	1,200
Total	10	1	180	.....	180	.....	7	1,425
JANESVILLE, ROCK CO.								
Badger State Machine Co., Machinery	1	.....	11	.....	11	.....	.....	.....
Baines, F. L., Tobacco warehouse.	1	.....	54	.....	54	1	.....	.....
Bassett & Echlin, Harnesses	1	.....	30	3	33	.....	.....	.....
Bicknell Hardware Co.	1	.....	7	.....	7	.....	.....	.....
Blodgett Milling Co., Flour mill....	2	2	15	2	17	.....	3	255
Buob, M., Brewery	6	.....	5	.....	5	.....	1	50
Carle, L. B., Tobacco warehouse... ..	1	.....	10	50	60	.....	.....	.....
C. M. & St. P. Ry., Repair shop....	2	.....	18	.....	18	.....	1	50
C. & N. W. Ry., Repair shop	4	.....	49	.....	49	.....	1	100
Choate, Hollister Co., Furniture....	2	.....	52	1	53	.....	2	8
Clinton, W. E. & Co., Bookbinding ..	1	.....	3	4	7	.....	.....	.....
Croak Brewing Co.	3	1	6	.....	6	.....	2	90
Doty, E. P., Flour	1	.....	5	.....	5	.....	.....	.....
Erler, R. L., Tobacco	1	.....	3	19	22	.....	.....	.....
Fifield Bros., Tobacco cases	3	.....	6	.....	6	.....	.....	.....
Fisher & Fisher, Tobacco	1	.....	10	16	26	1	.....	.....
Fitchett & Grove, Printing .....	.....	1	2	.....	2	.....	.....	.....
Friedman, J. & Co., Tobacco	1	.....	2	5	7	1	.....	.....
Gazette Printing Co. ....	.....	1	32	3	35	2	.....	.....
Green, M. F. & Sons, Tobacco .....	.....	1	8	40	48	.....	.....	.....
Grundy Bros., Tobacco	1	.....	3	15	18	.....	.....	.....
Hanson Furniture Co.	3	1	30	.....	30	.....	1	80
Heddles, L. B., Tobacco	1	.....	14	11	25	1	.....	.....
Heller & Burgess, Repair shop	1	.....	3	.....	3	.....	.....	.....
Hemming, Wm. & Son, Ale brewery ..	1	.....	2	.....	2	.....	.....	10
Hohenadel & Co., Pickles	4	1	100	75	175	.....	3	255
Hough Porch Shade Co.	5	.....	36	30	66	6	1	83
Independent, The, Publishing	1	.....	1	.....	1	.....	.....	.....
Janesville Barbed Wire Co.	4	.....	55	.....	55	.....	1	150
Janesville Batting Co., Cotton bat-ting	3	.....	4	1	5	.....	.....	.....
Janesville Carriage Works	2	1	20	.....	20	.....	.....	.....
Janesville Cement Post Co.	2	.....	4	.....	4	.....	1	150
Janesville Clothing Co., Overalls and shirts	1	.....	8	40	48	.....	.....	.....
Janesville Electric Co., Light and power	2	.....	15	.....	15	.....	1	200
Janesville Journal, Publishing	1	.....	1	1	2	.....	.....	.....
Janesville Machine Co., Farm im-plementations	18	3	225	.....	225	1	3	460
Janesville Pearl Button Co.	1	.....	13	15	28	.....	.....	.....
Janesville Plating Works .....	.....	1	2	.....	2	.....	.....	.....
Janesville Sash & Door Co.	4	1	83	2	85	.....	1	100
Janesville Steam Laundry .....	.....	1	4	16	20	.....	1	60
Janesville Waterworks	2	.....	3	.....	3	.....	3	375
Jones, A. W., Tobacco	1	.....	20	32	52	.....	.....	.....
Kent Corn Planter Works	5	.....	15	.....	15	.....	1	40
Kimberly, E. O., Printing	1	.....	1	.....	1	.....	.....	.....
Lewis Knitting Co., Underwear	2	.....	8	112	120	.....	.....	.....
McGee, A. E., Tobacco	1	.....	6	10	16	.....	.....	.....

TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
JANESVILLE—Continued.								
McGiffin & Fifield, Tobacco	1	.....	16	48	64	2	.....	.....
Marquess, Julius, Tobacco	1	.....	26	71	97	2	.....	.....
Marzluff, F. M. Co., Shoes	1	1	60	30	90	5	.....	.....
Milwaukee Elevator Co.	1	.....	1	.....	1	.....	.....	.....
Mouat, Frank, Tobacco.....	1	.....	7	28	35	1	.....	.....
New—Doty Mfg. Co., Punching machines	8	.....	20	1	21	.....	.....	.....
New Gas Light Co.	2	.....	4	.....	4	.....	2	80
Northern Grain Co., Feed mill.....	1	.....	2	.....	2	.....	.....	.....
Parker, W. H., Printing	1	.....	1	.....	1	.....	.....	.....
Parker Fountain Pen Co.,	1	.....	25	11	36	.....	.....	.....
Randall & Athorn, Machine shop.....	1	.....	2	.....	2	.....	.....	.....
Recorder Printing Co.	1	.....	11	1	12	.....	.....	.....
Riverside Steam Laundry	1	1	4	8	12	.....	1	60
Robinson Brewing Co., Ale and porter	3	.....	5	.....	5	.....	.....	.....
Rock County Mineral Water Co.	1	.....	2	.....	2	.....	.....	.....
Rock County Beet Sugar Co.	6	3	250	.....	250	.....	8	1,200
Rock River Cotton Co., Yarn, batting, etc. ....	.....	1	65	25	90	1	2	200
Rock River Hay Tool Co.	1	.....	4	1	5	.....	.....	.....
Rock River Machine Co., Shears, punches, etc.	3	1	20	.....	20	.....	1	50
Rock River Woolen Mills	4	.....	56	24	80	.....	2	260
Rumrill, J. H., Tobacco	1	.....	10	20	30	.....	.....	.....
Ryan, J., Tobacco	1	.....	2	9	11	5	.....	.....
Sanford & Soverhill, Tobacco	1	.....	15	35	50	3	.....	.....
Shurtleff Co., Butter and ice cream	1	.....	2	.....	2	.....	1	15
Sohlman, John, Tobacco	1	.....	8	25	33	.....	.....	.....
Tanberg, Geo. E., Printing .....	.....	1	1	.....	1	.....	.....	.....
Taylor & Lowell, Wire fencing	1	.....	6	.....	6	.....	.....	.....
Thayer, J. M., Tobacco	1	.....	2	16	18	1	.....	.....
Thorogood & Co., Cigar boxes	6	1	26	24	50	5	1	125
Troy Steam Laundry	1	.....	5	5	10	.....	1	20
Tuckwood Machine Co., Windmills, tanks, etc.	1	.....	2	.....	2	.....	.....	.....
Welsh, T. E., Tobacco	1	.....	7	24	31	.....	.....	.....
Western Shoe Co.	2	.....	31	14	45	1	.....	.....
Williamson Fountain Pen Co.	1	.....	3	1	4	.....	.....	.....
Wisconsin Carriage Co.	2	1	29	3	32	.....	1	50
Total	156	29	1,734	927	2,661	39	48	1,603
JEFFERSON, JEFFERSON CO.								
Ambrose, F. O., Repair shop	1	.....	5	.....	5	.....	.....	.....
City Brewery	1	4	22	4	26	.....	2	160
Copeland—Ryder Shoe Co.	3	1	95	30	125	2	2	100
Crown Bottling Works, Bottling seltzer	1	.....	3	.....	3	.....	.....	.....
Fromholz Lumber Co., Sash and doors	2	.....	20	.....	20	.....	1	45
Heimerl Hide & Leather Co., Tannery	3	.....	10	.....	10	.....	1	80
Jefferson Brewing & Malting Co.	1	1	4	.....	4	.....	1	10
Jefferson Brick & Tile Co.	7	.....	35	.....	35	.....	1	190
Jefferson City Light Co.	3	.....	3	.....	3	.....	2	200
Jefferson Flour Mill Co.	1	1	3	.....	3	.....	.....	.....
Jefferson Steam Laundry	1	.....	2	3	5	.....	1	16
Jefferson Woolen Mill, Carding wool	2	1	1	.....	1	.....	.....	.....
John & Beck Shoe Co.	1	.....	21	5	26	.....	.....	.....
Kemmeter Co., The, Brick	3	.....	14	.....	14	.....	1	40
Rock Valley Creamery	2	.....	2	.....	2	.....	1	25

TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
JEFFERSON—Continued.								
Stoppenbach's Sons Co., Packing...	5	1	30	.....	30	.....	1	80
Moon Upholstering Co.	1	.....	4	.....	4	.....	.....	.....
Vaughan, O. C. Mfg. Co., Farm im- plements	8	.....	20	1	21	.....	1	80
Wisconsin Mfg. Co., Chairs	2	1	41	4	45	.....	1	100
Total	48	10	335	47	382	2	16	1,035
JEFFERSON JC., JEFFERSON CO.								
Lytle—Stoppenbach Co., Malt house	2	4	12	.....	12	.....	2	250
Total	2	4	12	.....	12	.....	2	250
JOHNSON CREEK, JEFFERSON CO.								
Grell, H. J., Co., Creamery	2	.....	5	1	6	.....	1	20
Kottke—Warnes Co., Wagons	1	.....	4	.....	4	.....	.....	.....
Mansfield, Geo. C. Co., Creamery..	1	1	3	.....	3	.....	2	40
Pitzne—Huebner, Feed mill	2	.....	2	.....	2	.....	1	40
Total	6	1	14	1	15	.....	4	100
JUNEAU, DODGE CO.								
City Roller Mills, Flour	2	.....	4	.....	4	.....	1	100
Independent, The, Publishing	1	.....	2	.....	2	.....	.....	.....
Juneau Boiler Works	2	.....	2	.....	2	.....	1	8
Juneau Creamery	1	.....	1	.....	1	.....	1	20
Lytle—Stoppenbach Co., Elevator..	1	.....	1	.....	1	.....	.....	.....
Peters, P., Furniture Mfg. Co.....	4	.....	28	4	32	.....	1	80
Reul, John F., Boxes	1	.....	4	.....	4	1	1	16
Telephone, The, Publishing	1	.....	2	.....	2	.....	.....	.....
Total	13	.....	44	4	48	1	5	224
KAUKAUNA, OUTAGAMIE CO.								
Chicago & Northwestern Ry. Co., Shops	7	.....	400	.....	400	.....	3	250
Cornell & Ward, Paper	1	.....	11	5	16	.....	.....	.....
Domestic Laundry Co.	1	.....	3	2	5	.....	.....	.....
Holhne Machine Co., Machine shop	1	.....	3	.....	3	.....	.....	.....
Kaukauna Electric Light Co.	1	.....	2	.....	2	.....	2	145
Kaukauna Fibre Co.	1	.....	70	.....	70	.....	3	500
Kaukauna Lumber & Mfg. Co., Planing mill	4	.....	8	1	9	.....	.....	.....
Kaukauna Machine Works, Machine shop	1	.....	9	1	10	.....	1	30
Kaukauna Steam Laundry	1	.....	4	2	6	.....	1	12
Kaukauna Sun, Publishers	1	.....	3	2	5	.....	.....	.....
Kaukauna Times, Publishers	1	.....	5	3	8	.....	.....	.....
Kaukauna Water Works	1	.....	1	.....	1	.....	2	320
Lindauer Pulp Co., The	1	.....	30	.....	30	.....	.....	.....
Outagamie Paper Co.	2	1	90	32	112	.....	2	160
Thilmany Paper & Pulp Co.....	3	.....	101	19	120	.....	3	350
Union Bag & Paper Co.	1	1	40	110	150	.....	3	400
Total	28	2	770	177	947	.....	20	2,167

TABLE 1—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees				Boilers.	
	Under 3 stories	3 or more stories.	Male.	Female.	Total.	Under 16 yrs of age.	No.	Total h. p.
KEMPSTER, LANGLADE CO.								
Borth, Fred, Finishing lumber.....	4		44		44		2	103
Meyer & Borth, Saw mill	2		45		45		3	195
Total	6		89		89		5	298
KENDALLS, MONROE CO.								
Canney, W. S., Feed mill	1		1		1			
Chicago & Northwestern Ry. Co., Roundhouse	1		4		4		1	80
Kendalls Creamery	2		1		1			
Kendalls Keystone, Publisher	1		1		1			
Total	5		7		7		2	100
KENOSHA, KENOSHA CO.								
Allen's Sons, N. R., Tannery.....	7	5	853		853		14	2,100
American Steam Laundry	1		9		14	4	1	20
Arnesen & Konsek, Foundry	4		10		10			
Arnold, G. A., Gasoline engines.....	1		3		3			
Badger Brass Mfg. Co., Auto. lamps	10		174	18	192	3	1	175
Bain Wagon Co.	22		400		400	7	3	350
Baldwin Coal Co., Geo. S.	1		4		4		1	40
Bee Hive Fly Catcher Co.	1		16		16			
Borstad, Emil, Repair shop	1		3		3			
Burnett & Meyers, Fishermen.....	1		10		10			
Chicago Brass Co., Sheet brass	12		339	2	341		9	1,350
Chicago—Kenosha Hosiery Co.	12	1	245	721	963	358	5	1,300
Cooper Underwear Co.	2		50	56	106	33		
Craney, Spaulding Brick Co.	1		16		16		2	85
Davy Burnt Clay Ballast Co.	6		3		3		1	60
Eagle Steam Laundry Co.	1		3	7	10		1	20
Fisher Coal Co., Peter J.	1		9		9		1	60
Frost Mfg. Co., Plumbers' sup- plies	4		60	5	95	3	1	80
Grant Planing Mill	1		14		14		1	80
Gross & Neisgard, Planing mill	1		15		12			
Hausmann, Louis, Printer		1	1		1			
Harriman & Son, Vises	1		6		6			
Jeffrey & Co., Thos. B., Auto- biles	19		675		675	8	6	900
Kenosha Cement Co., Cement blocks	1		12		12			
Kenosha Crib Co., Furniture	8		140		140	4	2	300
Kenosha Evening News, Publishers	1		14	1	15			
Kenosha Gas & Electric Light Co.	7		5		5		2	90
Kenosha Gas & Light Co., Electric railway	2		9		9		3	600
Kenosha Laundry	1		2	9	11	1	1	35
Kenosha Machine Shop	1		5		5			
Kenosha Sash & Door Co.	9		14		14	1	1	40
Kenosha Union, The, Publishers.....		1	2	1	3			
Kenosha Volksfreund, Publishers	1		2		2			
Kenosha Water Co.	5		4		4		2	150
Koas & Co., N. H., Rendering	2		7		7		1	20
Kribs, Chas., Repair shop	1		1		1			
Model Steam Laundry	1		3	7	10	1	1	20
Modern Mfg. Co., Infants' shoes	1		3		3			
Meiselbach Typewriter Co.	10		110		110		4	480
O'Donnell Coal Co.			3		3		1	50
Paris Creamery Co.	1		3		3		1	30

TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
KENOSHA—Continued.								
Pettit Malt Co., M. H.....	2	1	16		16		2	180
Pierce & Co., Peter, Fire apparatus	1		6		6			
Piersch, Nicholas, Carriages	5		12		12			
Piersch, Peter, Wagons	2		5		5			
Priddis Cement Co., John, Sidewalks			7		7			
Remer Laundry Co.			2	7	9		1	25
Simmons Mfg. Co., The, Iron beds	9	9	1,200	300	1,500	60	13	1,300
Stembach, John, Sidewalks			7		7			
Visible Typewriter Co.	3		160		160	12	4	400
Wells, Frank, Machine shop	1		30		30		1	80
Whitaker, T. B., Tools and repairs	1		2		2			
Windsor Spring Co., Bed springs...	5		120	5	125		1	150
Winter Sash & Door Co.	1		16		16			
Total	200	18	4,863	1,148	6,011	495	88	10,270
KEWASKUM, WASHINGTON CO.								
Kewaskum Flour Mill	1	1	2		2			
Rommel, Nicholas, Machine shop	1		3		3			
Rosenheimer Malt & Grain Co.	3	2	12		12		2	200
Total	5	2	17		17		2	200
KEWAUNEE, KEWAUNEE CO.								
Aluminum Sign Co., Novelties	2		10	6	16		1	45
Borgman, J. M., Planing mill	6		8		8		1	5
Hamachek, Frank, Feed cutters	3		12		12		1	40
Kewaunee Brewing Co.	5		7		7		1	39
Kewaunee Canning Co.	7	1	117	85	152	8	1	125
Kewaunee Casket Co.	4	1	24	6	30		2	120
Kewaunee Enterprise, Publishing	1		4	2	6			
Kewaunee Grain Co., Elevator		1	3		3			
Kewaunee Iron Works, Machine shop	2		4		4			
Kewaunee Listy, Publishers	1		2	2	4			
Pilsner Brewing Co.	4		5		5		1	30
Seyk, W. Co., Canning	3	1	55	21	76	10	2	200
Svoboda, Joe, Furniture	3		9		9		1	20
Zimmer, August, Foundry	1		5		5			
Total	42	4	265	72	337	18	11	615
KIEL, MANITOWOC CO.								
Holdensteiner, S., Elevator	1		2		2			
Kiel Milling Co., Flour mill	2	1	4		4			
Kiel Grain & Milling Co., Flour mill	3	1	5		5		1	75
Kiel Mfg Co., Tables	5	2	75	1	76		2	200
Kiel National Zeitung, Publishers.	1		3		3			
Kiel Water Works	1		3		3			
Kiel Wooden Ware Co., Cheese boxes	9		82		82	6	2	200
Richards, J. F., Machine shop	1		2		2			
Ventin & Gisch, Machine shop	1		2		2			
Total	24	4	178	1	179	6	3	475

TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
KILBOURN, COLUMBIA CO.								
City Water Works	1		2		2		2	160
Dells Reporter, The, Publishers....	1		1	1	2			
Kilbourn Machine Co., Machine shop	1		2		2			
Marshall, G. M., Repairing	1		1		1			
Mirror—Gazette, Publishing	1		2		2			
York & Co., J. W., Elevator and mill	4	1	5	1	6			
Total	9	1	13	2	15		2	160
KIMBERLY, OUTAGAMIE CO.								
Kimberly, Clark Co., Paper and pulp	4	1	225		225		3	300
Total	4	1	225		225		3	300
LAC DU FLAMBEAU, VILAS CO.								
Flambeau Lumber Co., Saw mill ..	9		256		256		7	700
Total	9		256		256		7	700
LA CROSSE, LA CROSSE CO.								
Advance Bedding Co., Mattresses..		1	14	3	17			
Argus, The, Publishing	1		2		2			
Art Glass Co., The	1		3		3			
Badger Steel Roofing Co.	1		5		5			
Barth, Franz Brewing Co.	6	1	12		12		1	50
Benton & Sons, Thos. F., Gasoline engines		1	14		14			
Blinston, W. H., Contractor	1		4		4			
Cargill & Co., W. W., Elevator I..	1	1	2		2			
Cargill & Co., W. W., Elevator II.	1	1	7		7		1	80
Chicago, Burlington & Quincy R. R., Shops	20		135		135		2	100
Chicago, Milw. & St. Paul R. R., Roundhouse	8		95		95		2	230
City Plow Works	2		2		2		1	20
City Water Works	1		6		6		3	57.5
Ceasby Granite Co., C. J., Monuments	1		10		10			
Close, Chas. F., Gasoline engines..	1		3		3			
Colman Lumber Co., C. L., Planing mill	7		72		72		1	125
Dagendesh, Geo., Building stone ..	2		6		6		1	40
Davis, Medary & Platz, Tannery ...	6	1	84		84		5	290
Doud Sons & Co., Flour barrels ...	5		12		12		1	40
Egan Mfg. Co., Potato machinery..	1		6		6			
Franklin Iron Works, Machinists ...	1		4		4			
Funke Co., J. B., Confectionery ..		1	35	15	150	9	1	65
Gardner Printing Co., Printing ..		1	12	1	13	2		
Gateway City Cooperage Co., Kegs.	2		11		11			
Gateway City Pearl Button Co.	1		25		25			
Gateway City Steel T. & R. Co., Sheet metal	2		12		12	1		
Grans & Sons, A., Grist mill.....	1	1	5		5			
Grauke, Otto, Crates.....	1		4	1	5			
Gund Brewing Co., John.....	17	3	213	30	243	12	4	590

TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
LA CROSSE—Continued.								
Hackner, Egid, Church furniture...	5		50		50	3		
Haerter, Nic, Book binding.....	1		3	1	4			
Heilman Brewing Co.....	14	3	90	10	100	3	3	240
Harker, George, Trunks.....	1		4		4			
Herman, Thos., Tailor.....	1		6		6			
Hyde, S. Y., Elevator.....	1	1	6		6		1	80
Hynne-Bernard Granite Co., Monu- ments	1		7		7			
Ice Cream & Butter Co., The.....	1		7		7			
James, Alfred, Foundry.....	7		41		41	2	1	10
Kabat, Joe, Cooper.....	1		5		5		1	40
Keller, G. A., Printing.....	1		4		4			
Knothe, Printing.....	1		1		1			
Kratchevil, M., Confectioner.....		1	13	19	32			
Kuhn Sash & Door Co.....	5	2	87		87	7	2	250
La Crosse Boiler Works.....	2		10		10			
La Crosse Boot & Shoe Co.....		1	30	9	39			
La Crosse Bottling Works, Soda water	2		6		6			
La Crosse Box Co.....	3		18		18		1	50
La Crosse Can Co., Tin cans.....	1	1	165	5	170	20		
La Crosse Carriage Co., Carriages.....		2	24	2	26			
La Crosse City Railway Co.....	2		70		70		4	620
La Crosse City Water Works.....	1		6		6		3	555
La Crosse Clothing Co., Overall and shirts	1	1	18	52	70			
La Crosse Cooperage Co., Kegs.....	3		31		31		1	100
La Crosse Cornice & Ceiling Co.....	1		8		8			
La Crosse Cracker & Candy Co.....		1	37	79	116	28	1	30
La Crosse Engraving Co.....		1	18		18			
La Crosse Gas & Electric Co.....	0		18		18		3	100
La Crosse Hammock Works.....	1		8	8	16			
La Crosse Knitting Works, Hosiery	1	1	20	86	106	23	1	80
La Crosse Paper Box Co.....	1		4	6	10	1		
La Crosse Monument Works.....	1		9		9			
La Crosse Plow Co., Agricultural machinery	13	5	222	3	225	6	2	330
La Crosse Press Co., Publishing.....	1		30	3	33			
La Crosse Rubber Mills Co., Rub- ber clothing	9		34	85	119		2	280
La Crosse Rug Co., Rugs.....	1		12		12	2		
La Crosse Soap Co.....	2		3		3		1	30
La Crosse Steam Laundry.....	3		12	48	60		1	80
La Crosse Steel Bridge Works.....	1		9		9			
La Crosse Corrugating Co., Roofing	2		12		12			
La Crosse Threshing Machine Co.....	3		32		32		1	60
La Crosse Tribune, Publishing.....	1		12	2	14			
La Crosse Volksfreund Co., Pub- lishing	1		5		5			
La Crosse Well Drill Works, Well tools	1		5		5		1	12
La Crosse Wool & Fur Co.....	1		5		5			
Langdon & Boyd, Meat packers.....	3		31		31		2	110
Leona Garment Co., Clothing.....		1	1	8	9			
Liesenfeld, A. A., Printing.....	1		8	5	13			
Listman Mill Co., Flour.....	5	2	69	7	76		4	500
Litho Paint Sign Co., Signs.....		1	9		9		1	80
Martin Bros. Co., Clothing.....		1	12	50	62	2		
Medary Saddlery Co.....		1	25	3	28			
Mitchell Brewing Co.....	14	3	72	3	75	1	3	300
Miller, August, Brooms.....	2		20		20			

TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
LA CROSSE—Continued.								
Modern Steam Laundry.....	1	1	7	23	30	.....	1	40
Monitor Brewing Co.....	4	1	4	4	8	.....	1	35
Moores Hand Laundry.....	1	.....	2	6	8	.....	1	10
Nordstern Ass'n, The, Publishing..	1	.....	5	3	8	.....	.....	.....
North American Telegraph Co.....	1	.....	8	8	8	.....	.....	.....
Northern Wis. Leaf Tobacco Co....	.....	1	15	74	89	8	.....	.....
North Side Bottling Works, Soda water	1	.....	12	.....	12	.....	1	15
Onalaska Woolen Mills, Hosiery....	1	.....	2	15	17	.....	.....	.....
Ott & Sons, B., Machinists.....	5	.....	8	.....	8	.....	.....	.....
Pacific Electric Co., Electric signs.....	.....	1	5	1	6	.....	.....	.....
Pamperin Leaf Tobacco Co.....	1	.....	2	45	53	4	.....	.....
Pein, A. H., Sash and doors.....	3	.....	8	.....	2	.....	.....	.....
Peterson & Son, Gasoline engines....	1	.....	2	.....	2	.....	.....	.....
Pierce Stevenson Elevator Co.....	1	1	8	.....	8	.....	1	80
Reimers, D., Meat packing.....	3	.....	10	.....	10	.....	.....	.....
Reliable Pearl Button Co.....	1	.....	8	.....	8	.....	.....	.....
Reliable Steam Laundry.....	1	.....	11	34	45	.....	1	40
Riverside Box Co., Boxes and crates	2	.....	10	.....	10	1	1	75
Salzer, John A., Seeds.....	4	1	59	96	155	2	.....	.....
Scherz-Wiltz Printing Co.....	.....	1	12	4	16	.....	.....	.....
Schulz, Fred A., Sash and doors...	3	.....	3	.....	3	.....	.....	.....
Segelko & Kohlhaus Co., Sash and doors	8	5	148	2	150	7	5	400
Shorna, Chas., Furrier.....	1	.....	1	4	5	.....	.....	.....
Sidensoe, Theo., Tools.....	1	.....	61	.....	61	.....	2	100
Smith Mfg. Co., Wagons.....	8	.....	39	1	40	.....	.....	.....
Sorenson, O. J., Fixtures.....	2	.....	8	.....	8	.....	.....	.....
Spicer & Buschman, Printing.....	1	.....	1	6	7	.....	.....	.....
Staats & Co., E. G., Lodge supplies	1	.....	.....	.....	.....	.....	.....	.....
Stamping & Tool Co., Dies and novelties	1	.....	25	2	27	.....	.....	.....
Starch Bros., Cream separators.....	1	.....	12	.....	12	.....	.....	.....
Star Knitting Co., Gloves and mittens .....	.....	1	1	21	22	3	.....	.....
Summit Foundry Co., Stoves and furnaces	8	.....	53	.....	53	.....	1	100
Tisch Bros., Cigar boxes.....	.....	1	8	13	21	.....	1	60
Torrence & Son, John, Foundry....	6	.....	17	.....	17	.....	.....	.....
Trepte, B., Ornamental iron.....	1	.....	3	.....	6	2	.....	.....
Troer & Co., A. S., Plaining mill..	11	.....	25	.....	25	.....	5	230
Valyu Garment Co., Ladies' garments .....	.....	1	20	60	80	.....	.....	.....
Vlastenica, Publishing	1	.....	3	1	4	.....	.....	.....
Voigt Estate, F., Wagons.....	1	1	22	.....	22	.....	.....	.....
Voigt Berger Co., Switchboards....	5	.....	95	13	108	8	.....	.....
Wallace & Ryder, Gristmill.....	1	.....	3	.....	3	.....	.....	.....
Western Banana Crate Co.....	1	.....	10	4	14	.....	.....	.....
Western Hammock Co.....	1	.....	8	7	15	.....	.....	.....
Western Tobacco Works, Smoking tobacco	1	.....	8	25	33	.....	.....	.....
Western Union Telegraph Co.....	.....	1	11	2	13	.....	.....	.....
Wisconsin Electric Light Co.....	2	.....	6	.....	6	.....	3	900
Wisconsin Pearl Button Co.....	1	.....	35	25	60	2	.....	.....
Wolf & Sieloff, Blank books.....	1	.....	2	.....	2	.....	.....	.....
Yeo & Clark Co., Flour mill.....	1	1	5	.....	5	.....	1	50
Total	325	59	3,164	1,131	4,295	168	88	8,307

TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
LADYSMITH, RUSK CO.								
Alden Novelty Co.....	2		8		8		1	50
Bell, M. O., Saw and planing mill..	1		10		10		1	60
City Waterworks	1		2		2		1	25
Cleveland, W. H., Box factory.....	1		3		3		1	33
Corbett, B., Lumber Co., Saw mill	2		30		30		1	75
Journal, The, Publishing.....	1		2	1	3			
Ladysmith Electric Light & Power Co.....	1		1		1		1	100
Masler, D. H., Wagons.....	1		3		3		1	10
Menasha Paper Co.....	5		110		110		2	700
Menasha Woodware Co.....	6		75		75	2	2	200
News, The, Publishing.....	1		2	1	3			
Weekly Budget, Publishing.....	1		3	1	4			
Total	23		249	3	252	2	11	1,250
LAKE GENEVA, WALWORTH CO.								
American Laundry	1		4	2	6			
Borden's Condensed Milk Co.....	2		16		16		1	40
Burton, Denison & Davidson, Feed mill	1		4		4			
Chicago Steam Laundry.....	1		2	3	5		1	20
Cleghorn Bros., Machine shop.....	1		2		2			
Cornell Bros., Creamery.....	1		7		7		1	15
Equitable Electric Light Co.....	1		6		6		2	160
Gill, W. P., Repair shop.....	1		3		3			
Host Bros. Packing Co., Meat packing	1		3		3		1	40
Lake Geneva Creamery.....	2		9		9		1	15
Lake Geneva Herald, Publishing....	1		3		3			
Lake Geneva Mfg. Co., Piano stools	1	1	56		56		2	125
Lake Geneva News, Publishing.....	1		3	2	5			
Lake Geneva Water & Light Co.....	7		3		3		2	240
Total	16	1	121	7	128		11	655
LAKE MILLS, JEFFERSON CO.								
Douglas, H. L., Flour and feed.....		1	1		1			
Fargo Creamery Supply Co.....	4		95	1	96			
Lake Mills Laundry.....	1		2	1	3		1	8
Lake Mills Leader, Publishing.....	1		5		5			
Myers, Wm. F., Printing.....	1		1		1			
Seaver, F. L., Cutlery.....	1		1		1			
Total	8	1	105	2	107		1	8
LAKE NEBAGAMON, DOUGLAS CO.								
H. N. & S. Ry. Co., Repair shop	3		10		10			
Nebagamon Lumber Co., Saw mill.	5		360		360	14	5	750
Total	8		370		370	14	5	750

TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
LANCASTER, GRANT CO.								
Grant County Herald, Publishing.	1	.....	3	2	5	.....	.....	.....
Lancaster Roller Mills, Flour and feed	2	1	3	.....	3	.....	1	80
Lancaster Electric Light Co.	3	.....	3	.....	3	.....	2	200
Lancaster Planing Mill.	2	.....	3	.....	3	.....	.....	.....
McDonald, Thos., Bridges.	1	.....	3	.....	3	.....	.....	.....
Rough Rider Mfg. Co., Overalls and shirts	1	.....	3	20	23	.....	1	12
Schuster Bros., Feed mill.	1	.....	3	.....	3	.....	.....	.....
Teller, The, Publishing.	1	.....	4	2	6	.....	.....	.....
Total	12	1	25	24	49	.....	4	292
LAONA, FOREST CO.								
Connor Lumber Co.	10	.....	300	.....	300	2	4	600
Total	10	.....	300	.....	300	2	4	600
LITTLE CHUTE, OUTAGAMIE CO.								
Little Chute Pulp Co.	2	.....	72	.....	72	.....	.....	.....
Zuland Roller Mills, Flour.	1	.....	1	.....	1	.....	.....	.....
Total	3	.....	73	.....	73	.....	.....	.....
LITTLE FALLS, POLK CO.								
Little Falls Creamery.	2	.....	2	.....	2	.....	1	16
Little Falls Flour Mill.	.....	1	3	.....	3	.....	.....	.....
Winger Bros., Carding wool.	2	.....	12	4	16	.....	.....	.....
Total	4	1	17	4	21	.....	1	16
LODI, COLUMBIA CO.								
Dodge Creamery Co.	1	.....	2	.....	2	.....	1	15
Lodi Enterprise, Publishing.	1	.....	2	1	3	.....	.....	.....
Lodi Roller Mill & Light Co., Flour and light	1	1	2	.....	2	.....	1	35
Lodi Steam Laundry.	1	.....	1	2	3	.....	1	10
Total	4	1	7	3	10	.....	3	60
LOMIRA, DODGE CO.								
Lomira Cheese Factory.	1	.....	2	.....	2	.....	1	15
Lomira Elevator	1	.....	2	.....	2	.....	.....	.....
Lomira Review, The, Publishing.	1	.....	2	.....	2	.....	.....	.....
Meyer Bros., Elevator and grist mill	1	.....	2	.....	2	.....	.....	.....
Wolf, Peter, Planing mill.	1	.....	8	.....	8	.....	1	60
Total	5	.....	16	.....	16	.....	2	75

TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.			Boilers.		
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
LOYAL, CLARK CO.								
Christman, B., Staves and headings	5	.....	30	.....	30	.....	2	130
Etta Bros., Planing mill.....	1	.....	3	.....	3	.....	1	35
Graves A. A., Staves and electric light	6	.....	17	.....	17	2	2	160
Loyal Roller Mills, Feed.....	3	.....	3	.....	3	.....	1	50
Loyal Tribune, Publishing.....	1	.....	3	.....	3	.....	.....	.....
Schmitz, John, Shingles and lath...	1	.....	2	.....	2	.....	1	25
Total	17	.....	58	.....	58	.....	7	400
LUCK, POLK CO.								
Pederson Bros., Saw, planing, and feed mills	3	.....	30	.....	30	.....	2	95
Total	3	.....	30	.....	30	.....	2	95
McFARLAND, DANE CO.								
Brickson, P. E., Tobacco.....	1	.....	10	15	25	.....	.....	.....
McFarland Creamery	1	.....	2	.....	2	.....	.....	.....
Total	2	.....	12	15	27	.....	.....	.....
MADISON, DANE CO.								
Alford Bros., Laundry.....	1	.....	8	32	40	.....	2	70
American Cigar Co., Tobacco warehouse	4	.....	90	160	250	.....	1	100
American Plow Co.....	2	.....	40	.....	40	.....	1	120
American Tobacco Co., Leaf tobacco	1	1	40	.....	40	.....	2	130
Amerika Publishing Co.....	.....	1	5	.....	5	.....	.....	.....
Badger State Shoe Co.....	1	.....	63	41	104	.....	.....	.....
Baines, F. S., Leaf tobacco.....	1	.....	10	30	40	.....	.....	.....
Barnard & Wilder, Leaf tobacco...	1	.....	10	40	50	.....	.....	.....
Botschaffer, Der, Publishing.....	1	.....	4	.....	4	.....	.....	.....
Breckheimer Brewing Co.....	5	.....	10	.....	10	.....	1	50
Brown, H. H., Trunks.....	1	.....	2	.....	2	.....	.....	.....
Cantwell Printing Co.....	.....	1	34	8	42	.....	.....	.....
C., M. & St. P. Ry., Repair shops	6	.....	40	.....	40	.....	2	65
C. & N. W. Ry., Round-house.....	5	.....	25	.....	25	.....	1	25
Cohn, A., & Co., Leaf tobacco.....	.....	1	21	74	95	.....	.....	.....
Coleman, F. J., Leaf tobacco.....	1	.....	6	30	36	.....	.....	.....
Cooper, T., Foundry.....	3	.....	8	.....	8	.....	.....	.....
Curtis Collar Pad Co.....	2	.....	8	7	15	.....	1	20
Democrat Printing Co.....	1	.....	90	35	125	.....	.....	.....
Electrical Supply Co.....	1	.....	4	3	7	.....	.....	.....
Fauerbach Brewing Co.....	8	.....	20	.....	20	.....	2	250
F. F. F. Laundry.....	.....	1	5	15	20	.....	1	35
Findorf, J. H., Sash and doors...	4	1	60	.....	60	.....	1	60
Frederickson, A. D. & F. V., Sash and doors	3	.....	25	.....	25	.....	1	50
French Battery Co., Dry batteries.	1	.....	18	17	35	1	.....	.....
Fuller & Johnson Mfg. Co., Agric. implements	25	3	370	5	375	.....	3	400
Gallagher, John, Tents and awnings	1	.....	4	6	10	.....	.....	.....

TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
MADISON—Continued.								
Garluss, B., Machine shop.....	1	.....	6	.....	6	.....	.....	.....
Gisholt Machine Co., Machine tools	16	.....	544	6	550	2	3	556
Gould, Wells & Blackburn Co., Cor- fee roasting	1	.....	15	.....	15	.....	.....	.....
Grimm's Book Bindery.....	.....	1	8	7	15	.....	.....	.....
Hanson, Fred, Sash and doors.....	1	.....	20	.....	20	.....	.....	.....
Hausman Brewing Co.....	13	3	26	.....	23	.....	3	28
Kanouse, C. H., Wagons, etc.....	1	.....	2	.....	2	.....	.....	.....
King & Walker, Printing presses, etc.	5	.....	35	.....	35	.....	1	30
Kleuter Bros., Feed mill.....	2	.....	4	1	5	.....	.....	.....
Ledwith, Geo., Carriage shop.....	3	.....	7	.....	7	.....	.....	.....
Lion Laundry	1	.....	2	8	10	.....	1	15
Madison Boat Co.....	4	.....	10	.....	10	.....	1	10
Madison Candy Co.....	.....	1	23	22	45	.....	.....	.....
Madison Carriage Co.....	1	.....	5	.....	5	.....	.....	.....
Madison Fixture & Plating Works.....	2	.....	2	.....	2	.....	.....	.....
Madison Gas & Electric Co.....	13	.....	83	.....	83	.....	4	900
Madisonian, The, Publishing.....	1	.....	4	.....	4	.....	.....	.....
Madison Knitting Works.....	1	.....	6	5	11	.....	1	12
Madison Saddlery Co.....	.....	1	28	.....	28	.....	.....	.....
Madison Steam Dye Works.....	1	.....	6	1	7	.....	1	10
Madison Steam Laundry.....	1	.....	2	7	9	.....	1	20
Madison Tent & Awning Co.....	1	.....	1	2	3	.....	.....	.....
Madison Traction Co., Shops, etc.....	4	.....	7	.....	7	.....	.....	.....
Madison Underwear Co.....	1	.....	3	25	28	.....	.....	.....
Madison Waterworks	3	.....	5	.....	5	.....	2	260
Malec Bros., Shoes	1	.....	4	.....	4	.....	.....	.....
Mason-Kipp Mfg. Co., Lubricators.....	1	.....	30	2	32	.....	1	60
Mayer, Walter, Printing.....	1	.....	3	.....	3	.....	.....	.....
National Gate Works.....	1	.....	17	3	20	.....	.....	.....
Newbury & Peper, Machine shop.....	1	.....	5	.....	5	.....	.....	.....
Northern Electrical Co., Electrical machinery	11	.....	315	85	400	.....	3	600
Payton, Martin, Foundry.....	3	.....	20	.....	20	.....	.....	.....
Radke, W. D., Interior woodwork.....	3	.....	5	.....	5	.....	.....	.....
Scanlon-Morris Co., Hospital furni- ture	1	.....	7	3	10	.....	.....	.....
State Journal Printing Co.....	1	1	47	3	50	.....	1	40
Taylor & Gleason, Printing.....	.....	1	6	.....	6	.....	.....	.....
Teckemeyer Candy Co.....	1	.....	15	20	35	3	.....	.....
Tracy, Gibbs & Co., Printing.....	2	.....	15	1	16	.....	.....	.....
United States Sugar Co., Beet sugar	7	2	200	.....	200	.....	1	15
Valvoline Oil Co., Burning-oils.....	5	.....	10	.....	10	.....	1	16
Weidenbeck, Dobelin & Co., Wagon supplies	4	.....	9	1	10	.....	.....	.....
Wisconsin Brick Co.....	.....	1	16	.....	16	.....	2	200
Wisconsin Staats Zeitung, Publish- ing	1	.....	3	.....	3	.....	.....	.....
Wisconsin Wagon Co.....	1	1	8	.....	8	.....	.....	.....
Total	301	21	2,609	705	3,314	6	46	4,443
MAIDEN ROCK, PIERCE CO.								
Maiden Rock Press, Publishing.....	1	2	1	3
Total	1	2	1	3

FACTORY INSPECTION.

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TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
MANAWA, WAUPACA CO.								
Advocate, The, Publishing.....	1		3		3			
Brown, M. E., Cement blocks.....	1		4		4			
Esche-Nelson Co., Flour.....		1	3		3		1	60
Little Wolf River Lumber Co., Saw mill	6		40	1	41		1	80
Manawa Butter & Cheese Co.....	1		1		1		1	20
Manawa Mill, Flour and feed.....		1	3		3			
Total	9	2	54	1	55		3	160
MANITOWOC, MANITOWOC CO.								
Aluminum Foundry Co.....	5		13	1	14			
Brand Printing & Binding Co.....	1		7	5	12			
Burger, Henry, Boats.....	2		12		12			
Cartwright, Mattison Co., Gloves ..	4		40	110	150			
Daily Tribune, The, Publishing	1		5		5			
Drast, H. & Son, Paper boxes	4		4	10	14		1	25
Duggan, John, Planing mill.....	4		10		10		1	40
Grunnell Mfg. Co., Machine shop.....	3		28		28			
Herald-Press Publishing Co.....	1		4	4	8			
Johnson, J. G. Co., Coal	5		20		20		1	75
Kunz & Bleser Co., Brewery	8	2	14		14		2	250
Landreth, Albert Co., Canning	7	2	105	80	245	38	3	200
Madson Seed Co.....		2	6	38	44	12		
Maertz, A. C., Flour mill	3	1	3		3		1	60
Manitowoc Aluminum Novelty Co.....	7		102	28	130	22	2	180
Manitowoc Boiler Works	7		75		75		2	250
Manitowoc Building Supply Co., Wood-work	7		42		42		1	85
Manitowoc Daily News, Publishing	1		5	3	8			
Manitowoc Dry Dock Co., Ship-building	18		362	3	365		2	160
Manitowoc Electric Light Co.....	4		9		9		4	320
Manitowoc Gas Co.....	3		6		6		1	20
Manitowoc Glue Works	6		32	3	35		2	225
Manitowoc Knitting Works, Jackets	5		9	34	43		1	100
Manitowoc Malting Co.....	6	3	25		35		4	600
Manitowoc Mattress Co.....	1		4	1	5			
Manitowoc Pea Packing Co.....	7	1	32	25	57	7	1	100
Manitowoc Pilot, Publishing	1		5	2	7			
Manitowoc Post, Publishing	1		3	1	4			
Manitowoc Seating Co., Church furniture	11	1	179	1	180		3	375
Manitowoc Seed Co.....		2	2	20	22			
Manitowoc Waterworks Co.....	3		7	1	8		2	200
Merchants' & Manufacturers' Printing Co.....	1		5	1	6			
Nord Westen, Der, Publishing	1		3	3	6			
Northern Grain Co., Grain and produce	14	4	77		77		3	450
Oriental Mill, Flour	3	1	8		8			
Palace Steam Laundry	3		2	6	8		1	50
Rahr's Wm. Sons Co., Malting and brewing	15	5	100	7	107	1	6	800
Rausch, A. H., Sash and doors.....	8		16		16		1	100
Reiss Coal Co.....	6		55		55		4	320
Richards Iron Works, Machine shop	6		29	1	30		1	35
Richter, A. M. & Son, Vinegar.....	2	1	7		7		1	75
Schnorr Bros., Paper boxes	3		5	10	15		1	40

TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
MANITOWOC—Continued.								
Schoch, C., Lumber Co., Planing mill	6		24		24		1	40
Schreithart Brewing Co.	7	2	15		15		1	100
Smalley Mfg. Co., Agric. imple- ments	14		62	3	65	1	1	100
Snow Flake Laundry	1		2	6	8		1	35
Stoltz Mfg. Co., Ornaments	3		3	84	87	5		
Wahrheit, Die, Publishing	1		2	1	3			
Wisconsin Chair Co.	6		133		133	6	2	200
Wisconsin Knitting Mill, Hose	1		4	14	18	3		
Total	237	27	1,792	506	2,298	95	58	5,750
MARATHON, MARATHON CO.								
Marathon City Mill, Flour	1		3		3		1	80
Marathon Excelsior Co.	2		9		9		2	115
Menzner, Philip, Planing mill	1		10		10		1	120
Total	4		22		22		4	315
MARINETTE, MARINETTE CO.								
City Laundry	1		1		1			
City Water Co.	2		7		7		3	205
Eagle Printing Co.	1		21	6	27	2		
Hamilton & Merryman Co., Shingles, etc.	6		106		106		3	150
Lieber & Noel Mfg. Co., Shingles, etc.	1		14		14		1	65
Lindem & Mueller, Sash and doors.	3		33		33		1	90
Ludington, N. Co., Saw mill	5		129		129		10	500
Lum, Sam, Laundry	1		1		1			
Marinette Boiler Works	1		12		12			
Marinette Flour Mill	1	1	12		12			
Marinette Knitting Works	1		1	37	38	4		
Marinette Lumber Co.	9		301		301	13	9	650
Marinette & Menominee Box Co.	3		85		85	5	2	170
Marinette & Menominee Paper Co.	9	1	163	16	184		9	800
Marinette Planing Mill Co.	4		35		35		1	100
Marinette Steam Dye Works	1		4	2	6		1	10
Maurer, Jos., Printing	1		4		4			
Menominee & Marinette Light & Power Co.	3		7		7		4	390
Merryman Mfg. Co., Saw mill	2		103		103		7	600
Model Laundry	1		2	7	9		1	25
Noel, C. J., Excelsior	1		3		3			
Sawyer-Goodman Co., Lumber	5		300		300		8	900
Sing Kee Laundry	1		1		1			
Standard Oil Co.	2		1	1	2			
Stevens, A. W. Co., Threshing ma- chines	5		68	2	70		2	200
Swedish Printing Co.	1		5	3	8			
Twin City Bedding Co., Mattresses	1		3		3			
Union Steam Laundry	1		18	4	22		1	20
Volkshote, Publishing	1		1	1	2			
Wing, Sam, Laundry	1		1		1			
Total	75	2	1,447	79	1,526	24	63	4,875

TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
MARION, WAUPACA CO.								
Buhr, John, Creamery	1		2		2		1	10
Goldberg, L. M. & Co., Elevator		1	2		2			
Maes Bros., Furniture	1		6	2	8		1	30
Main, Fred, Saw mill	1		10		10		1	80
Marion Advocate, Publishing	1		2		2			
Marion Mills, Flour		1	2		2			
Patrotz, A., Elevator		1	2		2			
Rogers & Johnson, Box factory	2		14		14		1	60
Total	6	3	40	2	42		4	180
MARKESAN, GREEN LAKE CO.								
Friday & Co., H. P., Creamery	1		2		2		1	20
Long, H. W., Wagons	1		2		2			
Markesan Canning Co., Canning peas	3		8		8		2	100
Markesan Gas Works	1		1		1			
Markesan Herald	1		2		2			
Suik, Wm., Elevator	1		2		2			
Yep Sing, Laundry	1		1		1			
Total	9		18		18		3	120
MARSHFIELD, WOOD CO.								
Bille, Hans, Contracting	3		12	1	13		1	30
Hafer & Kalsched, Saw and planing mill	4		16		16		2	150
Lang & Shermann, Machinery	5		12		12			
Marshfield Bedding Co., Mattresses, etc.	4		30	5	35	4	2	140
Marshfield Boiler Works	1		3		3			
Marshfield Bottling Works, Soda water	1		3		3			
Marshfield Brewing Co.	12		16		16	1	2	70
Marshfield Democrat, Publishing	1		5		5	1		
Marshfield Light & Water Co.	2		4		4		2	200
Marshfield News, Publishing	1		6	3	9	1		
Marshfield Stave Works	4		50		50	2	1	135
Marshfield Steam Laundry	1		3	12	15		1	30
Marshfield Times	1		3		3			
Pettelka, John, Plumbing	1		4		4			
Puerner Creamery Co.	2		4		4		1	20
Rasmussen, Peter, Grist mill	2		3		3		1	50
Roddies Lumber & Veneer Co.	8	1	174	1	175	9	3	180
Upham Mfg. Co., Furniture, flour, etc.	19	2	289		289	12	9	950
Witters, F. H., Pickling factory	1		2	33	35	16		
Total	73	3	619	60	679	46	25	1,945
MASON, BAYFIELD CO.								
White River Lumber Co.	3		225		225		9	1,800
Total	3		225		225		9	1,800

TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs of age.	No.	Total h. p.
MAUSTON, JUNEAU CO.								
City Waterworks	1		1		1		1	60
Curran Bros., Elevator	4		4		4			
Electric Light & Power Co.	1		2		2		1	100
Harland & Fisher, Feed mill		1	3		3			
Juneau County Chronicle, Publish- ing	1		4		4			
Mauston Creamery	1		2		2		1	20
Mauston Star, The, Publishing.....	1		3	1	4			
Mauston Steam Laundry	1		1	1	2		1	10
Preissnitz, V., Wagon shop	1		3		3		1	16
Strong, H. C., Machinery	1		1		1			
Underwood, F. A., Cooperage	2		4		4		1	12
Total	14	1	23	2	30		6	213
MAYVILLE, DODGE CO.								
Bolhmer Bros., Foundry and ma- chine shop	3		2		2		1	25
Buerger Malting Co.	2	3	12		12		2	180
Dodge County Banner, Publishing..	1		6		6			
Dodge County Pioneer, Publishing.	1		6		6			
Electric Light Co.	1		1		1		2	250
Falk, J. W., Butter and cheese....	1		2		2		1	15
Hollentine, J. Co., Wagons	1		6		6		1	20
Matson, H. F., Machine shop.....	1		3		3			
Mayville News, Publishing	1		2		2			
Mayville Saw Mill	1		3		3			
Mayville Specialty Co., Castings....	1		14		14			
Mayville Steam Laundry	1		1	2	3			
Northwestern Iron Co., Pig Iron...	8	1	203		203		9	1,350
Paustain, F., Milling Co., Light, flour, boxes	1	1	4		4			
Ruedebusch, Aug., Brick	1		12		12			
Steiger J., Brewing Co.	6		5		5		1	20
Ziegler Brewing Co.	5		4		4		1	20
Total	36	5	286	2	288		18	1,830
MAZOMANIE, DANE CO.								
Mazomanie Flour Cabinet Co.....	1		10		10		1	30
Mazomanie Mill, Feed	1		3		3			
Mazomanie Sickle, Publishing	1		1		1		1	4
Village Electric Light Plant	1		1		1		1	70
Total	4		15		15		3	104
MEDFORD, TAYLOR CO.								
Campbell & Auschuetz, Iron works	2		5		5			
City Printing Office	1		2		2			
Henrich Bros., Wagons	1		3		3			
Medford Brewing Co.	6	2	9		8		1	75
Medford Building Supply Co., Wood-work	3		24		24		2	120
Medford Fruit Package Co., Boxes, baskets, etc.	2		29	6	35	13	1	70

FACTORY INSPECTION.

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TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
MEDFORD—Continued.								
Medford Lumber Co.	5	.....	75	.....	75	2	5	393
Medford Steam Laundry	1	.....	1	3	4	.....	1	10
Perkins, A. J. & Sons, Flour.....	1	1	3	.....	3	.....	1	75
Star-News, Publishing	1	.....	4	.....	4	.....	.....	.....
U. S. Leather Co., Tannery	8	.....	80	.....	80	.....	3	450
Waldbote, Publishing	1	.....	3	1	4	.....	.....	.....
Wesle Bros., Wagons	2	.....	3	.....	3	.....	1	10
Total	34	3	245	10	255	15	15	1,190
MELLEN, ASHLAND CO.								
Foster-Latimer Lumber Co.	7	.....	180	.....	180	.....	4	300
Mellen Weekly, Publishing .....	.....	1	3	.....	3	.....	.....	.....
U. S. Leather Co., Tannery.....	9	.....	90	.....	90	.....	6	900
Total	16	1	273	.....	273	.....	10	1,200
MENASHA, WINNEBAGO CO.								
Banta, Geo., Pub. Co., Book-binding	1	.....	12	4	16	1	.....	.....
Fox, R. U., Knitting Co., Hose, mittens, etc.	1	1	5	35	40	.....	.....	.....
Gilbert Paper Co.	10	1	106	54	160	10	5	1,250
Hewitt, W. P. & Co., Woolen mill.	2	1	14	30	44	9	.....	.....
Island Paper Co.	16	1	128	12	140	3	7	900
Little Pulley & Hardware Co.	1	.....	2	.....	2	.....	.....	.....
McKennon Excelsior Co.	4	.....	9	1	10	.....	1	100
Menasha Brewing Co.	4	1	4	1	5	.....	1	100
Menasha Iron Works	3	.....	5	.....	5	.....	.....	.....
Menasha Mfg. Co., Paper mill supplies	4	.....	22	.....	22	.....	.....	.....
Menasha Paper Co.	13	2	88	12	100	3	1	400
Menasha Record Co., Publishing....	1	.....	1	5	6	.....	.....	.....
Menasha Split Pulley Co.	10	1	24	1	25	.....	1	80
Menasha Woodenware Co.	68	7	956	2	958	48	6	1,810
Menasha Woolen Mill, Woolen cloth	3	1	19	36	55	3	1	50
Morkley Bros. & Sceiler, Machine shop	4	.....	12	.....	12	.....	.....	.....
Onnard Mfg. Co., Hardware	1	.....	4	.....	4	.....	.....	.....
Schoepel Bros., Tannery	3	.....	3	.....	3	.....	1	20
Stein, Geo., Printing	1	.....	1	.....	1	.....	.....	.....
Strange, J., Paper Co.	6	2	48	7	55	3	3	450
Twin City Laundry	1	.....	3	2	5	.....	1	15
Walter Bros., Brewing Co.	3	2	15	.....	15	.....	2	180
Whiting, Geo. A., Paper Co.	3	1	28	32	60	.....	3	325
Winnebago Anzeiger, Publishing ..	1	.....	2	.....	2	.....	.....	.....
Total	174	21	1,511	234	1,745	80	33	5,680
MENOMONEE FALLS, WAUKE- SHA CO.								
Enterprise Roller Mills, Grist mill.	2	1	5	.....	5	.....	1	80
Menomonee Falls Boiler Works.....	1	.....	2	.....	2	.....	1	20
Menomonee Falls Roller Mills, Grist mill	1	1	4	.....	4	.....	1	80

TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
MENOMONEE FALLS—Continued.								
Ness, Geo., Sash and doors	1	.....	4	.....	4	.....	1	40
Rowell Co., J. R., Agricultural im- plements	6	.....	20	.....	20	.....	1	50
Wegner, F. C., Elevator	1	.....	2	.....	2	.....	.....	.....
Wisconsin Sugar Co., Beet sugar...	6	4	160	.....	160	.....	10	1,350
Total	13	6	197	.....	197	.....	15	1,620
MENOMONIE, DUNN CO.								
City Gas Co.	1	.....	3	.....	3	.....	1	40
City Laundry	1	.....	4	.....	4	.....	1	5
Dunn County Iron Works, Gasoline engines	2	.....	6	.....	6	.....	1	15
Dunn County News, Publishing....	1	.....	6	3	9	.....	.....	.....
Dunn County Sash & Door Co.....	2	.....	14	.....	14	.....	1	60
Excelsior Brick Co.	6	.....	60	.....	60	.....	2	165
Globe Iron Works, Gasoline en- gines	4	.....	80	.....	80	.....	2	150
Henschell, V. L., Repair shop	1	.....	2	.....	2	.....	.....	.....
Herrum, C. L., Saw and planing mill	2	.....	10	.....	10	.....	1	45
Lutz, J. F., Bottling works	1	.....	2	.....	2	.....	.....	.....
Menomonie Elec. Light & Power Co.	2	.....	3	.....	3	.....	2	200
Menomonie Hydraulic Brick Co.....	8	.....	250	.....	250	5	2	90
Menomonie Iron Works, Machinery	3	.....	8	.....	8	.....	1	15
Menomonie Milling Co., Flour .....	.....	1	4	.....	4	.....	.....	.....
Menomonie Oscillating Sleigh Co....	1	1	12	1	13	.....	1	45
Menomonie Times, Publishing	1	.....	10	3	13	.....	.....	.....
Menomonie Waterworks	1	.....	2	.....	2	.....	2	160
Schmidt, H. A. & Co., Wagons, car- riages	2	.....	10	.....	10	.....	1	28
Submerged Electric Motor Co. ....	.....	1	5	.....	5	.....	.....	.....
Wisconsin Elevator Co.	1	.....	2	.....	2	.....	.....	.....
Wisconsin Power Co., Flour mill ..	3	.....	15	.....	15	.....	.....	.....
Total	43	5	508	7	515	5	13	1,015
MERIDIAN, DUNN CO.								
Meridian Creamery Co.	2	.....	2	.....	2	.....	1	12
Meridian Feed Mill	1	.....	2	.....	2	.....	1	16
Total	3	.....	4	.....	4	.....	2	28
MERRILL, LINCOLN CO.								
American Hide & Leather Co., Tan- nery	10	.....	70	.....	70	.....	3	450
Anson-Hixson Sash & Door Co....	12	1	187	.....	187	13	2	350
Barber, L. S., Excelsior	2	.....	7	.....	7	.....	.....	.....
Dengel & Rimmel Bros., Soda water	2	.....	2	.....	2	.....	.....	.....
English Mfg. Co., Woodenware....	6	.....	50	.....	50	4	2	250
Gilkey & Anson Co., Planing mill.	16	.....	231	.....	231	5	12	600
Hone's Steam Laundry	1	.....	3	6	9	.....	1	25
Leidiger Brewing Co.	8	.....	11	.....	11	.....	2	93
Lincoln County Roller Mills, Feed.	1	1	6	.....	6	.....	.....	.....
Lindauer Pulp Co.	7	.....	30	.....	30	.....	.....	.....
Merrill Advocate, Publishing	1	.....	6	2	8	.....	.....	.....
Merrill City Waterworks	4	.....	5	.....	5	.....	2	170

TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
MERRILL—Continued.								
Merrill Excelsior Co.	5	.....	10	.....	10	.....	1	50
Merrill Glove & Mitten Co.	3	.....	2	3	5	.....	1	15
Merrill Iron Works, Machinery....	7	.....	11	1	12	.....	.....	.....
Merrill Lumber Co.	14	.....	235	.....	235	.....	7	500
Merrill News, Publishing	1	.....	3	3	6	.....	.....	.....
Merrill Paper & Pulp Co.	9	.....	25	.....	25	.....	3	450
Merrill Railway & Lighting Co....	4	.....	12	.....	12	.....	4	400
Merrill Star, Publishing	1	.....	2	2	4	.....	.....	.....
Meyer, Emil, Veneering	1	.....	11	.....	11	.....	1	40
Stange Co., A. H., Sash and doors	15	2	650	.....	650	45	10	900
Wisconsin Thalbote, Publishing....	1	.....	3	2	5	.....	.....	.....
Wright, H. W., Lumber Co.	11	1	160	.....	160	.....	7	925
Total	142	5	1,732	19	1,751	72	58	5,250
MILTON, ROCK CO.								
Barnes, E. L., Elevator	2	.....	2	.....	2	.....	.....	.....
Borden, F. G. & Co., Leaf tobacco	1	.....	12	48	60	.....	.....	.....
Else & Son, Creamery	1	.....	2	.....	2	.....	1	20
Fetherstone Mill, Feed	1	.....	2	.....	2	.....	.....	.....
Total	5	.....	18	48	66	.....	1	20
MILTON JUNCTION, ROCK CO.								
Chambers, S. C., Leaf tobacco	1	.....	9	5	14	.....	.....	.....
Conway & Hubbell, Leaf tobacco...	1	.....	9	24	33	.....	.....	.....
Milton Co-op. Creamery Co.	1	.....	2	.....	2	.....	1	15
Stone, I. G., Blacksmithing.....	1	.....	3	.....	3	.....	.....	.....
West Lumber Co., Lumber and feed	1	.....	2	.....	2	.....	.....	.....
Total	5	.....	25	29	54	.....	1	15
MILWAUKEE, MILWAUKEE CO.								
Aaron & Marks, Clothing .....	.....	1	11	4	15	.....	.....	.....
Abel & Bach Co., Trunks and travelling bags	3	4	301	106	407	48	2	300
Abeles, F. E., & Co., Clothing.....	.....	1	8	30	38	1	.....	.....
Abresch, Chas., Co., Carriages and wagons	1	2	170	.....	170	.....	2	160
Ackerman Bros., Hats and caps....	1	.....	3	1	4	.....	.....	.....
Ackerman, R., Shoes	2	.....	24	16	40	6	1	50
Acme Pattern Mfg. Co., Wood and metal patterns	2	.....	9	.....	9	1	.....	.....
Adams Blank Book Co., Bindery....	.....	1	2	3	5	1	.....	.....
Adams, F. F., Tobacco Co. ....	.....	2	135	75	210	6	.....	.....
Adler, D., & Son, Clothing .....	.....	2	152	97	249	10	.....	.....
Advocate Publishing Co., Newspaper .....	.....	1	5	.....	5	.....	.....	.....
Albens & Lorens, Wool carders and bedroom supplies .....	.....	2	1	2	3	.....	.....	.....
Allen & American Steam Laundry..	.....	1	2	16	18	2	.....	.....
Allis, Chalmers Co., Foundry machine shop	32	16	1,275	25	1,300	4	9	1,250
Alten, Nick, Dye works .....	.....	2	2	6	8	.....	1	40
Amazeen & Co., Shoes .....	.....	1	29	21	50	6	1	.....
Ambrosia Chocolate Co. ....	.....	2	5	6	11	1	1	45
American Boiler Works .....	.....	1	5	.....	5	.....	.....	.....
American Box Toe Co. ....	.....	1	11	2	13	.....	.....	.....

TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
MILWAUKEE—Continued.								
American Bridge Co.	3		203		203		2	160
American Candy Co.		1	95	167	262		2	300
American Copper & Iron Works, Coppersmiths	1		6		6			
American Fine Arts Co., Lithographing	1	1	105	20	125	9	2	90
American Hide & Leather Co., Tannery	9	3	328		328		3	630
American Malting Co., (Kraus-Merkerbranch)	1	7	53		53		5	635
American Malting Co., (Main plant)	3	6	62	2	64		2	220
American Malting Co., (South Bay branch)	3	3	66		66		3	375
American Monolith Co., Sanitary flooring	2	1	10	1	11		1	60
American Sal Soda Co.	5		6		6		1	25
American Show Print Co., Lithographing	1		59	10	69	3		
American Standard Steel Fitting Co.	4		10		10		1	150
Anderson, Robert, Forge Co.	1		13		15		1	100
Andrae, Julius, & Sons Co., Electric works	2		44	10	54			
Andrews, Fred., & Co., (Town of Milw.) Stone cutting	11		40		40		2	200
Anstedt, C., Leather Co., Tanning	2		33		33		2	225
Armstrong Pattern Works	1		2		2			
Ashn, Thomas & Son	2		25		25	1		
Badger Candy Co.	1	1	17	42	59	15		
Badger Dye Works	1		6	19	25		1	30
Badger Fur Dressing & Dye Works	2	1	12		12		1	40
Badger Laundry	2		1	13	17		1	40
Badger Nail Co., Wire works	5		19		19			
Badger Sash & Door Co.	4		30		30		1	80
Badger Wire & Iron Works	2		14	1	15			
Baird Press, The, Job printing		1	4		4			
Banker, C. I., Wire fences		1	7		16			
Barkow, Herman, Wagons	1		14		14			
Barth Elevator Co., Elevators	3		58	2	60	2	2	
Battery Power Co., Developing		1	4		4		1	100
Bayley, Wm., & Sons Co., Blowers and exhausters	2	1	50		50		2	200
Bay View Laundry	1		1	3	9		1	25
Bay View Steel Casting Co., Foundry	2		18		18		1	35
Beach & Tomnsen, Cornice works	1		10		10			
Beaver Mfg. Co., Motors	2		50		50			
Beck, C. A., & Son Co., Boxes	8	1	160		160	6	2	400
Benesch Bros., Rags and scrap iron	2		40	4	44		1	50
Berger Bedding Co., Bedsprings, mattresses, etc.	2	2	53	12	70	3	1	100
Berger-Crittenden Milling Co., Flour mill	4	3	75		75		5	1,000
Berthelet Construction Co., Cement blocks	4		9		9			
Berthelet, H., & Co., Sewer pipes	6		25		25			
Beverly Co., Skirts		1	30	50	80	3		
Biersach & Neldermeier Co., Galvanized iron	2		30		30			
Biersach Mfg. Co., Tin tags	1		4		4			

FACTORY INSPECTION.

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TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilery.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
MILWAUKEE—Continued.								
Birkenwald, S., Co., Dairy and butcher's supplies	2	1	40	.....	40	.....	.....	.....
Blatz, Val., Brewing Co.	15	11	638	73	711	60	6	2,400
Bliss Electric Car Lighting Co.	1	.....	32	3	35	.....	.....	.....
Blomkun, Electric Co., Armature winding .....	.....	1	7	.....	7	.....	.....	.....
Blumenfeld, Lascher & Brown Co., Millinery .....	.....	3	40	100	140	2	.....	.....
Bodden & Bright Co., Coffee and peanut roasting	1	.....	7	1	8	.....	1	15
Bodden Packing Co., Pork and beef packing	9	.....	175	.....	175	.....	3	300
Bogenberger & Bros., Galvanized iron	1	.....	15	.....	15	.....	.....	.....
Bollenbach & Vanderkamp, Printing .....	.....	1	7	.....	7	1	.....	.....
Bond, Hahn & Sarnow Co., Lime and cement	1	.....	25	.....	25	.....	.....	.....
Borchert Malting Co.	4	2	12	.....	12	.....	3	250
Bornstein-Zimmerman, Clothing... ..	.....	1	6	9	15	.....	.....	.....
Bottrell Cycle & Specialty Co., Bicycle Mfg.	1	.....	3	.....	3	.....	.....	.....
Bradley & Metcalf Co., Boots and shoes .....	.....	1	192	76	268	17	2	180
Brand Stove Co., Stoves and ranges	4	2	246	4	250	5	2	250
Braun, P. J., Glove Co., Gloves... ..	.....	1	10	17	27	2	.....	.....
Brazell, J. G., Printing.....	1	.....	8	.....	8	1	.....	.....
Brirhaupt Printing Co., Job printing .....	.....	1	10	.....	10	.....	.....	.....
Brenk Bros., Merchant tailors.....	.....	1	28	8	36	.....	.....	.....
Brett, J. G., Grain Saver Co., Grain saving machine.....	1	.....	1	.....	1	.....	.....	.....
Brill, J. P., Art glass works.....	1	.....	4	.....	4	.....	.....	.....
Brillman Bros., Lithographing.....	.....	1	59	6	65	8	.....	.....
Brodesser Mfg. Co., The, Elevators	2	1	40	2	42	.....	1	100
Brown, Fred, Repair shop.....	.....	1	2	.....	2	.....	.....	.....
Bub, Jos., Co., Upholstery.....	.....	1	23	1	24	2	.....	.....
Buehler, Andrew, Printing.....	.....	1	4	.....	4	1	.....	.....
Buestrin, Henry, & Son, Contractors	2	.....	45	.....	45	.....	.....	.....
Bulfin, Edw., Job printing.....	.....	1	11	.....	11	1	.....	.....
Bunde & Upmeyer Co., Jewelry .....	.....	1	28	7	35	.....	.....	.....
Rurdick & Allen, Job printing.....	.....	1	20	2	22	2	.....	.....
Burnham Bros., Brick.....	7	.....	80	.....	80	5	2	115
Burrighs, George, & Son, Trunks.....	.....	1	14	.....	14	.....	.....	.....
Calumet Laundry Co.....	2	.....	1	11	12	.....	1	50
Campbell Laundry .....	.....	1	11	71	82	2	.....	.....
Canar Bros. Laundry .....	.....	1	2	7	9	.....	1	30
Cannon Printing Co.....	.....	1	50	10	60	.....	3	240
Carnival Laundry	1	.....	1	9	10	2	1	67
Carpeles Co., Trunks.....	.....	1	50	10	60	.....	2	150
Cassel, B., & Co., Scrap iron .....	.....	.....	2	.....	2	.....	.....	.....
Catholic Citizen, The, Newspaper.....	.....	1	6	2	8	.....	.....	.....
Central Bitulithic Paving Co.....	1	.....	15	.....	15	.....	1	30
Central Foundry Co.....	5	.....	60	.....	60	.....	1	35
Chain Belt Co.....	3	2	173	2	175	36	.....	.....
Chapin Co., Mill stuffs.....	2	1	13	1	14	.....	.....	.....
Chase Brick Co., Brick.....	6	.....	125	.....	125	7	4	45
Cherno, Gust, Sausage.....	1	.....	4	.....	4	.....	1	20
C., M. & St. P. Ry., Car heating plant	1	.....	4	.....	4	.....	2	150

TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
MILWAUKEE—Continued.								
C., M. & St. P. Ry., Elevator "A".....	50	3	3,731	3	3,734	3	11	2,300
C., M. & St. P. Ry., Repair shops								
C., M. & St. P. Ry., Switches and material	4	1	75		75		2	150
Chicago & Northwestern Ry., Repair shop	14		191		191		3	200
Clanick-Hirsch Co.....	1		3		3			
Clark Engraving Co., Engraving and printing		1	62	8	70			
Clifford Mfg. Co., Automobile parts	1		5		5			
Cohn Bros., Clothing.....		1	50	100	150	4		
Cohn, Isador, Machine shop and scrap iron	1		13		13	1		
Colnik Mfg. Co., Structural iron.....	1		18		18			
Colonial Leather Co., Tanning.....	2		12		12		1	100
Columbia Knitting Co.....		1	9	16	25	1		
Columbia Publishing Co., Newspaper		1	6	1	7			
Conrad Bros., Tannery.....	5	1	90		90		4	400
Conway Veneered Doors & Mantle Co.	7		130		130	6	3	180
Copperud, Andrew, Machine shop.....	2		21		21		1	85
Cornillie Bros., Saloon and office fixtures	1	3	25		25		1	40
Corrigan, Edw., Binding.....		1	1	3	4			
Coxe Bros. & Co., Coal docks.....	12		50		50		4	320
Cramer-Krassett Co., Art and job printing		1	39	7	46	3		
Cream City Bonnet Frame Works.....		1	4	26	30	8		
Cream City Brewing Co.....	15	3	91		91	1	3	300
Cream City Can Works, Tin factory	1		18	12	30	4		
Cream City Casket Co.....	2		14	1	15		1	50
Cream City Laundry.....		1	10	53	63	4	2	160
Cream City Litho-Engraving Co.....	1		3		3	1		
Cream City Marine Boiler Works.....	1		20		20		1	30
Cream City Mirror Plate Co., Mirrors	2		40		40		2	150
Cream City Sash & Door Co., Sash, doors, etc.	16	5	230	5	235	1	3	400
Cream City Smelting Works.....	2		3		3			
Cream City Tallow & Grease Co., Rendering plant	1		2		2		1	40
Cream City Woven Wire Works, Springs, etc.	4	1	75	7	82	5	3	240
Creede, Geo., & Brother, Carriage works	3	1	25		25			
Crow Stove Polish Co.....	2		3	3	6			
Crucible Steel Casting Co.....	4		30		30			
Crystal Soap Co.....	1		14	12	26	3	1	
Curtiss-Yale Co., Sash and doors.....	4		28	3	31			
Cutler-Hammer Co., Electrical controlling device	7	1	414	13	427	29	2	260
Daisy Roller Mills, Flour.....	1	3	60		60		3	450
Davis Bros., Boiler works.....	1		30		30		1	35
Davis, H. M., Plating.....		1	5		5			
Davis Mfg. Co., Hardware specialties	5		40		40		1	100
Deguenther Laundry.....		1	2	18	20	1	1	50
Delaney Oil & Lubricant Co.....	1		4	1	5		1	20
Develaar, M., & Son, Brick.....	4		40		40		1	125
Diamond Ink Co.....		1	21	27	48	2		

TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
MILWAUKEE—Continued.								
Dings Electro-Magnetic Separator Co., Mining machinery.....	1		14		14	2		
Doelger-Kissten & Scherff Co., Machinists	1		21		21		1	40
Doerfinger Artificial Limb Co.		1	4	1	5	1		
Domacnost, The, Newspaper.....		1	5	2	7			
Domestic Laundry		1	4	7	11			
Donner Bros., Feed mill.....	3		8		8			
Dorsch, Jno., & Sons, Farm imple- ments	1		5		5			
Downey & Kruse Co., Machine shops	1		8		8			
Dunck, H., Tanks	1		3		3		1	25
Durant, W. V., Co., The, Counting machines		1	5		5			
Dutcher, J. A. & P. E., Co., Steel castings	6		100		100		2	120
Dyer Saddlery Co., Saddlery.....		1	20	1	21			
Eagle Brass Foundry, Brass, bronze and white metal.....	1		2		2			
Eagle Knitting Mills.....		1	2	15	17	6		
Eagle Lye Works.....		2	39	20	59	16	1	75
Economical Tool Co., Machine tools	1		12		12			
Elastic Nut & Bolt Co.....	3		40		40	12	1	75
Electric Power & Battery Co., Elec- tric batteries		1	8		8		1	100
Elite Foundry Co., Gray iron cast- ings	1		14		14			
Elkert Bros., Tanning.....	3		15		15		1	40
Ellsworth & Thayer Mfg. Co., Gloves, fur coats, etc.....		1	55		130	2		
Empire Laundry	1		1	8	9		1	40
Erinrude, O., Pattern works.....	1		3		3			
Eureka Laundry	1		2	17	19	2		
Evening Wisconsin, Newspaper.....		1	130	20	200	4	1	150
Everest-Braband Co., Job printing.	1		6		6	2		
Everly, J. M., Job printing.....		1	13		13	2		
Everst, John, Gloves.....	1		2	4	6			
Everwear Hosiery Co.....		1	2	27	29	7		
Fac-simile Typewriting Co., Prtg.....		1	7	1	8	2		
Fairbanks-Morse Co., Scales.....	1		6		7			
Falk Co., The, Steel castings.....	8		583	5	588	6	4	800
Fast Machine Tool Works.....	1		2		2			
Feix & Goethel, Galvanized iron works		1	15	1	16			
Fernekes, J., & Son, Candy		1	12	32	44	7		
Ferrofix Brazing Co., Machinists....	2		3		3		1	15
Fiebrig Chemical Co., Harness dressing	1		10		10			
Figved Bros., Tanning furs.....	1		8	2	10			
Filer & Stowell Co., Corliss engines and machinery	10	2	504		504		2	700
Fischer Mfg. Co., Bunion protect- ors		1	7	7	14			
Fixter, Joseph, Light barrels.....	1		50		50			
Fleischer Knitting Works.....	1		1	3	4			
Flint, J. G., Co., Coffee and spices		1	25		25	1	1	90
Flushing Pumping Station, Flush- ing river	1		13		13		4	400
Forest Home Monument Co., Monu- ments	2		5		5			

TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs of age.	No.	Total h. p.
MILWAUKEE—Continued.								
Forward Mach. & Tool Co., Light structural iron, etc.....	3	.....	23	.....	23	.....	1	75
Four Wheel Drive Wagon Co., Motors .....	.....	1	28	.....	28	.....	.....	.....
Four Wheel Drive Wagon Co., Auto trucks	2	.....	90	2	92	.....	1	40
Fowle Printing Co., The.....	.....	1	15	.....	15	.....	.....	.....
Frank, L., & Son Co., Sausage and sauerkraut	6	.....	79	3	82	5	2	300
Franklin Print Shop, The, Job printing	1	.....	5	.....	5	.....	.....	.....
Franzen, Wm., & Son, Glass works	6	.....	490	.....	490	48	3	240
Fraser Co., The, Flour mill machinery .....	.....	1	19	2	21	.....	.....	.....
Fress, J., Awnings	1	.....	2	1	3	.....	.....	.....
Freidenker Publishing Co., Newspaper .....	.....	1	7	1	8	1	.....	.....
French Wax Figure Co.....	.....	1	10	20	30	.....	.....	.....
Friedlander Knitting Co., Gloves and mittens .....	.....	1	2	120	122	2	2	200
Friend & Marks, Clothing.....	.....	1	60	50	110	1	.....	.....
Friend Bros., Clothing.....	.....	1	79	15	94	.....	.....	.....
Friend-Weinbaum, Skirts .....	.....	1	5	20	25	.....	.....	.....
Froedtert Bros. Grain & Malting Co.	2	4	28	.....	28	.....	2	300
Fuller-Warren Co., The, Stoves and furnaces	13	1	500	2	502	.....	3	240
Galland & Henning Pneumatic Malting Drum Co.....	2	.....	75	.....	75	1	1	150
Gallasch Co., The, Mustard.....	.....	1	13	.....	13	3	.....	.....
Gallun, A. T., & Son, Tanners.....	13	5	530	.....	580	15	8	1,000
Gavin Art Glass Works.....	2	.....	16	.....	16	2	.....	.....
Gehl, M. C., & Co., Creamery supplies	1	.....	15	.....	15	.....	.....	.....
Gem Hammock & Fly Net Co.....	.....	3	108	234	342	75	2	250
Gem Laundry Co.....	1	.....	3	14	17	2	1	45
Gem Milling Co.....	3	.....	7	.....	7	.....	3	120
Gem Upholstery Co.....	2	.....	15	.....	15	.....	.....	.....
General Construction Co., Stone cutting	6	.....	35	.....	35	.....	1	45
Genz & Schrader, Wagons.....	1	.....	3	.....	3	.....	.....	.....
George & Heyer, Upholstering.....	.....	1	38	.....	38	.....	.....	.....
Germania Bindery Co.....	.....	1	13	23	35	5	.....	.....
Germania Publishing Co., Newspaper .....	.....	1	212	22	234	16	3	600
Gether, C. R., Co., Electrotyping.....	.....	1	22	1	23	1	.....	.....
General Construction Co., Cut stone	3	.....	35	.....	35	.....	1	50
Geuder & Paeschke Mfg. Co., Tinware	6	5	475	125	600	61	3	475
Geyer, Wm., Machinist.....	1	.....	2	.....	2	.....	.....	.....
Gillett & Co., Printers.....	.....	1	13	1	14	.....	.....	.....
Globe Chemical Mfg. Co., Glacetine Mfg.	1	.....	1	.....	1	.....	.....	.....
Globe Printing Co.....	.....	1	6	.....	6	.....	.....	.....
Globe Wire & Iron Works, Wire and iron goods	3	.....	22	1	23	2	1	20
Goelzer & Schultz, Screens, storm, sash, etc.....	1	.....	12	.....	12	.....	.....	.....
Goerres, Philip, Cooperage Co., Beer kegs	4	.....	64	.....	64	3	1	100
Graf Bros., Ladies' hats	1	1	1	12	13	1	.....	.....

TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
MILWAUKEE—Continued.								
Graf, John, Weise beer and soda water	7		36	1	37	3	2	70
Grant Marble Works	2		225		225		2	200
Graselli Chemical Co.	1		4	1	5			
Great Western Knitting Co.		1	8	44	52	8		
Green Stamp & Printing Co., Printing		1	9		9	1		
Greenslade Foundry	4		90		90			
Green Telephone & Electric Mfg. Co., Telephones		1	12		12			
Greve Show Print Co., Lithographing	1		26	4	30	2		
Grocer's Roasting Co., Coffee roasting		1	5		5			
Gross Coal Co., The	5		49	1	50		3	200
Gross, F. C., & Bros. Co., Packers	4	1	40		40		2	200
Gross, P. A., & Son, Millinery		1	12	5	17			
Gruhl, Sash & Door Co., Interior finish	3	1	46		46	7	2	130
Gugler Lithographic Co.	2		80	30	110	12	2	120
Gunz, R., & Co., Packers	6	2	80		80		3	300
Haase, Chas. F., Coal Co.	2		20		20		1	60
Habegger, Theo., Carriages and wagons	1		14	1	15			
Hackendahl & Schmidt, Structural iron	1		17		17		1	40
Hadler, C. & H., Job printing	1		4	1	5	1		
Haertlein, B., & Co., Brass foundry	1		8		8			
Hafemann, Charles, Brooms	1		4		4			
Hake, F. D., Job printing	1		4	1	5			
Hammersmith Engraving Co.		1	51	9	60	1		
Hann-Wangerin-Weickardt Co., Pipe organs and church furniture.	2		40	2	42			
Hansen, C. O., Co., Gloves		1	66	84	150	15		
Hansen's Empire Fur Factory		1	34	66	100			
Hansen, John & Son, Soap	1		3		3		1	30
Hanson, Charles H., Interior finish	3		9		9			
Harsh, Smith & Edmunds Shoe Co.		1	63	28	91	5		
Hathaway, J. E., & Co., Piling and dock contractors	4		44		44			
Hayes, George, Box factory	1		16		16		1	25
Hebenstreit & Bartell, Furniture and upholstering	3		18	2	20	3		
Hecht & Zummach, Paints and colors		3	32	1	33		1	60
Heil Co., The, Steel tank	1		22		22			
Heimann, M., & Co., Millinery		1	35	78	113	2		
Heimann, M., & Co., Flowers and feathers		1	12		12			
Heinemann, Geo. H., & Co., Coats and hats		1	27	19	46	1	1	45
Heinl, Jos., & Sons, Carriages and wagons	1		18	1	19		1	75
Heinn Specialty Co., Binding		1	45	48	93	3	1	30
Helmholz Mitten Co.		1	9	13	22			
Hendee-Bambord-Crandell Co., Job printing	1		19	4	23	3		
Hendee-Kaltz Brush Co., Bristles and wire brushes		1	19	3	22	5		
Hendee Wire Brush Co., Brushes		1	21	9	30	4		

TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
MILWAUKEE—Continued.								
Hennes & Keller, Bottle filling machines	1		24		24			
Hennecke, C., Co., Statuary wire and iron works		1	38	2	40	22		
Henschel, C. B., Mfg. Co., Cigar boxes	2	1	34	97	131	23	1	75
Hepfinger, Louis, Machinist	1		2		2			
Herold Co., The, Newspaper		1	31	15	46	2		
Hess, Charles, Sausages	2	1	36		36		1	50
Hewitt Mfg. Co., Brass castings	4		60		60			
High Service Pumping Station, Water plant	1		15		15		4	400
Hilbert, A. J., & Co., Perfumes		1	8	12	20	1		
Hilty, M., Lumber Co.	5		150		150		3	450
Hirsch Bros., Iron foundry	1		10		10	1	1	30
Hochmann Art Glass Co.		1	10		10	1		
Hock, John, Electroplating and oxidizing	1		8		8			
Hockendall & Schmidt, Iron works	1		25		25		1	40
Hoehn New Method Laundry	2		1	23	24	5	1	80
Hoelzl & Co., Printing	1		8		8	3		
Hoffman, B., Mfg. Co., Plumbers' materials	8		110		110		2	140
Hoffman-Billings Mfg. Co., Steam fitters' supplies		1	44		44		1	40
Hoffman & Billings Mfg. Co., Plumbers' brass and iron works	5	2	190	32	222	25	3	250
Hoffman & Bauer, Galvanized iron		1	50	1	51			
Holmes, E. A., Linotyping		1	7	1	8	1		
Holt Electric Co., Electric dynamos	1		10		10	1		
Holtz, Bernard, Brooms	1		5		5			
House of Correction, Factory chairs	10		345	30	375		4	320
Houtkamp Printing Co.	1		3	2	5			
Hoyer, Edw. P., Job printing		1	6		6	1		
Huebinger, Geo. M., Laundry	1		7	17	24	2	1	80
Huebsch Laundry		1	10	37	47	2		
Hummel & Downing, Paper box mfg.		1	33	22	55	3		
Husting, E. L., Soft drinks	3		35	1	36			
Ideal Laundry	2		2	40	42		1	80
Illinois Leather Co., Hide and plaster plant	3		25		25		2	200
Illinois Steel Co.	29		1,334		1,334		26	3,000
Imperial Blank Book Co., Bindery		1	5	4	9	1		
Independent Brewery	6	2	40		40		2	130
Independent Coal Co.	4		40		40		1	40
Interior Wood Work Co., Sash and doors	10	2	100		100	6	2	100
International Harvester Co., Cream separators and gasoline engines	28	9	2,145		2,145	32	6	750
Jacobs, K. W., Cooperage	6		60	1	61		1	80
Jaloss, H. V., Box factory	1		7		7		1	60
Jenkins, W. T., Book bindery		1	10	40	50	4		
Jens, T. E., Co., Print shop		1	6	1	7	2		
Jewett & Sherman Co., Coffee and spice mill		2	35	25	60	11	1	65
Johns, H. W., Manville Co., Boilers and pipe coverings	1	1	175	23	198	1	4	360
Johnson, B. J., Soap Co.	1	1	121	51	172	9	3	285

TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
MILWAUKEE—Continued.								
Johnson, Robert A., Co., Candy and crackers		3	197	322	513	181	2	150
Johnson Service Co., Regulators		1	133	1	134	10	2	200
Jonas Automobile Co., Auto repairing	2		10		10			
Jones, E. P., & Bro., Corks	4		9		9		1	40
Joyes Bros. Co., Awnings, etc.	1	1	19	10	29			
Jung Brewery Co.	8	4	131	7	133	8	3	240
Jurack, Charles, Pattern works	1		17		17			
Kaempf, F., Coppersmith	1		8		8			
Kahn Gas Stove Co., Gas and oil stoves	2		12		12			
Kaiser, Louis, Overalls and shirts		1	1	10	11			
Kalamazoo Knitting Co.	1	2	46	276	322	76	3	360
Kalt-Zimmers Mfg., Shoes and leg-gins		2	51	42	93	10		
Kamm, P. C., Grain elevator	3	1	15		15		2	80
Kanawha Fuel Co.	4		25		25		2	250
Karger, D., & Bro., Knit goods		1	1	9	10	2		
Keelyn Electric Co., Electrical engineers		1	9	1	10			
Kempsmith Mfg. Co., Milling machines	4		80		80		1	60
Keogh, Edw. Press, Job printing.		1	44	11	55	1		
Kern, John B. A., & Sons, Flour mill		1	96	2	98	3	4	700
Ketter, Fred, Caskets, tanks and vats	3	1	34		34		1	50
Keystone Press Printing Co.	1		6		6	1		
Kieckhefer Box Co., Packing boxes	7		217		217	27	3	600
Kieckhefer, A., Elevator Co., Elevators	1		35		35		1	60
Kipp, B. A., & Co., Upholstering.	7		52	4	56	5	1	37
Kipp, Fred, Coal and wood	1		8		8			
Kindt, C. F., Contractor	3		15		15		1	40
Klawing Co., Bindery		1	1	2	3	1		
Klein, Jacob, Planing mill	1		3		3			
Kling, George B., Fly nets, ropes, etc.	2		4	20	24	5		
Klauber Lithographing Co.		1	50	8	58	10		
Knudson, Charles, Pattern works.	1		3		3			
Koenig, Wm., Wood shoes	1		4		4			
Koerner, T., Baby shoes	1		6	13	19	5		
Koffend, Andrew, Boiler and machine shop	3		16		16		1	85
Kraus-Landon Co., Printing		1	12	2	14	3		
Kropp, E. C., Printing post cards.	1		25	63	88	15		
Kruecke Bros. Co., Brass foundry.	1		44	2	46			
Krueger & Domann, Printing	1		6		6	1		
Krueger Mfg. Co., Automobiles	1		12		12			
Kruse Engraving Co.	1		33	1	24			
Kundmann, Wenzel, Book binding.		1	9		9			
Kunz, J. L., Machinery Co., Repair shop	1		2		2			
Kurth, Herman, Brooms	1		4		4			
Kuyer Publishing Co., Newspaper.		1	29	8	37	2		
Lake View Laundry	2		1	5	6		1	25
Lamp-Miller Mfg. Co., Brass goods	2		25		25			
Lange, A., Mfg. Co., Bar and office fixtures	3		18		18		1	35

TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
MILWAUKEE—Continued.								
Langenberger Construction Co., Planing mill	1		17		17			
Landon Electrotyping		1	11	1	12			
Lanson, C. P. & J., Gas engines	1		80		30			
Layton Co., The, Beef and pork packers	12	2	85		85		2	160
Lehigh Valley Coal Co.	8		45		45		4	400
Levenson Bros., Caps		1	3	2	10			
Linch, Henry, Pants	1		24	16	40			
Lindemann, A. J., & Hoverson Co., Stoves	9	2	742		742	58	2	300
Lindsay Bros., Specialty shop	2		15		15			
Lint, Wm., Hides	1		10		10			
Liquid Carbonic Co.	1		15		15			
Lithotype Co., The, Printers plates		1	15		15			
Lobas, Peter M., Coal and wood	5		11	1	12		1	45
Loeffelholz Co., Brass foundries	4		30		30		1	20
Lowenbach, A., Job printing		1	3		3			
Loewenbach, B., & Son, Job printing		1	14	12	26	5	1	17
Loewenbach Machine Co., Automatic machinery		1	4		4			
Logemann Bros., Machinists	2	1	15		15		1	45
Lohr & Weifenbach, Monuments	2		10		10			
Lutter & Gies, Machine shop	1		45		45		1	35
Mahler, Albenberg & Co., Clothing		1	12	50	62	4		
Mandel Engraving Co.			32	3	35	3		
Manegold, E., Milling Co., Flour mill		2	20		20		3	350
Manthey & Sieker Construction Co., Machinists	1		11	1	12			
Marshall, August, Brushes	1		2		2			
Martin, Frank, Fur dresser and dyer	2		32	2	34	2	1	89
Martin, George, Leather	6	1	85		85		3	350
Matthews Bros., Furniture	5	2	141	4	145		2	170
Maxwell & Stillman Co., Stucco and composition	1		50	1	51			
Mayer, F., Boot and Shoe Co.	2	1	427	255	682	138	2	400
Mayhew Mfg. Co., Furniture and chairs	6	4	290	3	293	31	3	285
McDonald, J. T. L., Printing		1	2		2			
Mechanical Appliance Co., The, Motors and dynamos	2		85	16	101	6		
Meckelburg, A. F., Sash & Door Co.	6		79	1	80	1	2	90
Meier, Oscar, Die factory		1	10		10			
Meinecke, A., & Son., Children's toys, etc.	6	5	130	36	166	36	1	100
Meislinheimer Printing Co.	2		40	10	50	3		
Merkel Motor Co., Motor cycles, etc.	2		17		17	1		
Mertes-Miller Co., Boiler works	1		34		34		1	45
Metropolitan Mfg. Co., Clothing	1	1	9	60	69	6		
Meyer, Geo. J., Machinery Co., Brewers' and bottling machinery	1		17		17		1	
Meyer, L. A., Co., Electrical contractors	1		12	1	13			
Meyer-Rotter Co., Job printing		1	60	15	75	2		
Middleton Mfg. Co., Caps		1	12	9	21			

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TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
MILWAUKEE—Continued.								
Miller, H. C., & Co., Printing and book binding	1		66	28	94	8		
Miller-Genz Co., Millinery	1		18	33	51	11		
Miller Saw Trimmer Co., Machinists	1		7		7	1		
Milwaukee Aluminum Co., Aluminum castings	1		7		7			
Milwaukee Automatic Engine Supply Co.	1		5		5			
Milwaukee Bag Co.	2	1	63	102	165	24	2	150
Milwaukee Barrel Co.	4	1	40		40	1	1	50
Milwaukee Bedding Co.			20	5	25			
Milwaukee Blank Book Mfg. Co.		1	57	75	132	11		
Milwaukee Boiler Co.	2		80		80		1	97
Milwaukee Brass Mfg. Co.	4		115		115	10	1	100
Milwaukee Brewing Co.	8	2	49		49	2	2	200
Milwaukee Bridge Co., Structural iron	5		100	1	101	1	2	300
Milwaukee Casket Co.	3	3	44	10	54	1	2	180
Milwaukee Cement Co.	5	1	40		40		4	500
Milwaukee Chair Co.	11	2	300		300	11	4	400
Milwaukee Coffee Roasting Co.	1		5		5			
Milwaukee Coke & Gas Co.	10		500		500		10	4,000
Milwaukee Concrete Supply Co.	2		8		8			
Milwaukee Corrugating Co., Sheet metal goods	5		125		125	6	2	150
Milwaukee Cutting Die Co.	1		4		4			
Milwaukee Daily News, Newspaper		2	85	7	92	10		
Milwaukee Dry Dock Co.	7		100		100		2	120
Milwaukee Dry Dock Co., (South yard)	9		180		180		3	250
Milwaukee Dry Dock Co., (West yard)	9		75		75		2	120
Milwaukee Dustless Brush Co.	1	1	55	5	60			
Milwaukee Dye Works	1	1	19	31	50		1	60
Milwaukee Electric Ry. & Light Co., Electric light	3		28		28		14	4,650
Milwaukee Electric Ry. & Light Co., Power house		1	75		75		16	12,000
Milwaukee Electric Ry. & Light Co., Repair shop and foundry	4		315	10	325	7		
Milwaukee Elevator Co., Grain	1	1	15		15		2	300
Milwaukee Elevator Co., (Elevator E)	3	2	29		29		3	400
Milwaukee Envelope Co.	1	1	9	12	21	2		
Milwaukee Fire Department Repair Shop		1	17		17		1	40
Milwaukee Foundry Co.	1		2		2			
Milwaukee Free Press, Newspaper		1	105	8	113	1		
Milwaukee Gas Light Co., Meter and fitting department		1	145		145			
Milwaukee Gas Light Co., (third ward)	12	2	55		55		6	750
Milwaukee Gas Light Co., (west side)	12	1	130		130		5	1,000
Milwaukee Gas Stove Co.	9		122	3	125	9	1	125
Milwaukee Hay Tool Co.	10		50		50	9	2	140
Milwaukee Herald, Newspaper		1	96	26	122	4		
Milwaukee Journal Co.		1	117	8	125			
Milwaukee Lace Paper Co.		1	18	80	98	4	1	85
Milwaukee Linseed Oil Co.	7		25		25		2	150

TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
MILWAUKEE—Continued.								
Milwaukee Lithographing Co.		1	67	8	75	13	2	90
Milwaukee Machine Co., Gas engines	3		19	1	20	1		
Milwaukee Malleable & Gray Iron Works	3		350		350	24	1	75
Milwaukee Malting Co.	3	3	31		31		3	375
Milwaukee Metal Working Co.		1	17	1	18			
Milwaukee Mirror & Art Glass Work		1	43	1	44	1		
Milwaukee Modern Tool Co.	2		15		15			
Milwaukee Monument Co.	3		64		64		2	130
Milwaukee Motor Co.		1	37		37	1		
Milwaukee Net Co.		1	4	21	25	1		
Milwaukee Novelty Co., Bag frames		1	5		5			
Milwaukee Novelty Dye Works	1	1	20	30	50		1	125
Milwaukee Oil & Specialty Co.	1		2		2			
Milwaukee Ornamental Metal Mfg. Co.	1		5		5			
Milwaukee Paper Box Co.		1	7	23	30			
Milwaukee Parlor Frame Co.	1		13		13			
Milwaukee Pattern Works	1		10		10	1		
Milwaukee Printing Co.		1	20	11	31	6		
Milwaukee Skylight & Gal. Iron Cornice Works	1		8		8			
Milwaukee Spoke & Bending Co.	4		23		23	1	1	100
Milwaukee Stamping Co., Hardware specialties	5		30		30		1	40
Milwaukee Steel Foundry	3		50		50			
Milwaukee Stove & Foundry Co.	10		45		45	1		
Milwaukee Social Democrat Pub. Co.		1	14	2	16	2		
Milwaukee Suspender Mfg. Co.		1	1	8	9			
Milwaukee Tack Co.	4		11	4	15	4		
Milwaukee Tallow & Grease Co.	2		12		12		1	60
Milwaukee Tanning & Clothing Co., Sheepskin clothing		1	10	50	60	2		
Milwaukee Valve Co.	2		50	5	55	5		
Milwaukee Iron Works	5		25		25		1	80
Milwaukee Western Fuel Co., (Canal St.)	7	1	150		150		4	380
Milwaukee Western Fuel Co., (Cherry St.)	8		56		56		3	180
Milwaukee Western Fuel Co., (Commerce St.)	4		51		51			
Milwaukee Western Fuel Co., (Kinnickinnic Ave.)	8		70		70	2	2	200
Milwaukee Malt Co.	3	3	25		25		3	375
Milwaukee Worsted Cloth Co.	2		20	5	25		2	100
Milwaukee Worsted Mills, Yarn	7	1	44	105	149	32	4	450
Milwaukee Woven Wire Works	3		52		52	1	1	75
Minn Billiard Table Mfg. Co.	2		40		40			
Miotke, Jos., Special machinery....	1		2		2	1		
Mitchell Mfg. Co., Feed and litter carriers	2		4		4	1		
Molitor, M., Paper boxes	1	15	60		75	9	1	100
Monarch Mfg. Co., Coats and skirts	1	29	110		139	3		
Montvid, V., & Son, Clothing	1	12	40		52	4		
Moravetz Co., The, Furs	1	20	24		44	3		
Mueller, E. P., Stock food	1	1	24	2	26	1	4	450
Mueller & Son Co., The, Box factory	9	1	125	43	168	25	8	225
Mueller, L. J., Furnaces	3	2	38	2	40			

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TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
MILWAUKEE—Continued.								
Munkwitz, Edw. H., Co., Machine shop	4		15		15		2	130
My Laundry	1		16	29	45	5	1	65
Nase, Krauss & Kohen, Paints, shades, etc.		1	50	2	52			
Nash, J. M., Wood working machinery	2		20		20			
National Aniline & Chem. Co., Chemical Mfg.	2		4		4		1	26
National Biscuit Co.		1	111	83	199	23	2	120
National Blower Works	2		40		40			
National Box Co.	1		30		30	5	1	40
National Brake & Electric Co.	16	2	570	8	578	2	4	700
National Distilling Co.	5	3	48		48		6	300
National Electric Co., Electrical machinery	16	2	658	4	662		4	375
National Enameling & Stamping Co., Enamel ware	17	10	858	270	1,128	182	8	1,200
National Knitting Works	3	2	330	50	430	87	3	450
National Mfg. Co.		1	3	1	4			
National Straw Works, Straw hats	4	1	76	229	305	26	3	195
National Tanning & Fur Co., Fur garments		1	9	8	17			
Nelson, S., & Co., Fur dressing	3		16		16		1	60
Nicolar-Pantke Co., Furs		1	2	3	5			
Niedecken Co., Book binding		3	13	9	27	3		
Niedermeyer, A., Printing		1	3		3			
Nordberg Mfg. Co., The, Machinists	9	1	430		430	9	2	300
Nordberg Mfg. Co., The, Foundry	4		125		125			
North Ave. Fuel Co.	1		7		7			
North End Foundry Co.	1		12		12			
North Point Pumping Station-City water plant	6		30		30		11	1,500
North Side Brush Works	1		2	1	3			
North Side Coal Co.	5		20		20		1	80
Northern Novelty Works, Cutlery	1		6		6		1	15
Northwestern Cap Mfg. Co.		1	13	5	17			
Northwestern Carriage Works	1		8		8			
Northwestern Fuel Co.	5		50		50		4	250
Northwestern Fuel Co., (Dock 2)	3		65		65		3	200
Northwestern Furniture Co.	2	1	102		102		1	150
Northwestern Laundry Co.	1		6	14	20		1	30
Northwestern Lithographing Co.		1	46	5	51	7		
Northwestern Malleable Iron Co.	29		952	39	991	43	4	300
Northwestern Mfg. Co., Motors and dynamos	2		48	4	52	4	1	100
Northwestern Metal Co., Babbit	1		2		2			
Northwestern Pattern Works	1		3		3	1		
Northwestern Steam Laundry	1		6	9	15		1	30
Northwestern Publishing House	1		9	2	11			
Northwestern Straw Works, Straw hats	3	1	140	250	390	15	3	120
Milwaukee Tallow & Grease Co.	2		2		2		1	25
Northwestern Tile Co., Cement contractors	4		125		125			
Nortmann & Duffke Co., Steel castings	4		75		75		2	160
Obenberger, John, & Co., Iron works	2		17		17	3	1	20

TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
MILWAUKEE—Continued.								
Obenberger, Jos., & Son, Coal buckets	2	1	15	.....	15	.....	1	60
Orth, Phil., & Co., Flour packing... ..	2	.....	12	.....	12	.....	.....	.....
Ossit, Bros., Church furniture	4	.....	30	1	31	.....	1	125
Pabst Brewing Co.	22	29	1,747	321	2,068	255	27	3,000
Packages Publishing Co. ....	.....	1	6	3	9	.....	.....	.....
Pahl, E. F., & Co., Willow ware... ..	.....	1	15	2	17	.....	.....	.....
Pahl, E. R., & Co., Preserves .....	.....	1	12	14	26	.....	.....	.....
Painter, Benjamin, Millinery .....	.....	1	2	1	3	.....	.....	.....
Palace Laundry Co.	1	.....	7	27	34	.....	1	100
Patek Bros., Paints	2	1	17	2	19	.....	.....	.....
Patton Paint Co., Paints	4	2	175	25	200	.....	3	240
Pauling & Harnischfeyer, Machinery	8	1	549	.....	549	8	3	550
Pederson & Groben, Sash and doors	5	.....	56	.....	56	2	1	75
Peez & Hoffman, Carriages	1	.....	6	.....	6	.....	.....	.....
Pennsylvania Coal & Supply Co., Building material	13	1	36	.....	36	.....	1	80
Peterson, Robert, Paper ruling .....	.....	1	2	3	5	.....	.....	.....
Pfeffer & Smith, Machine shop .....	.....	1	12	.....	12	.....	.....	.....
Pfister & Vogel Leather Co., Tannery	19	10	990	137	1,127	39	4	2,000
Pfister & Vogel Leather Co., Tannery	16	3	360	.....	360	.....	6	1,600
Pflugandt Co., Candy .....	.....	2	30	65	95	25	1	50
Philadelphia & Reading Coal & Iron Co., Fuel	6	.....	50	.....	50	.....	3	220
Phillip & Co., Die works	1	.....	6	.....	6	.....	.....	.....
Phoenix Knitting Works .....	.....	1	23	415	438	108	2	300
Phoenix Machine Shop	1	.....	10	.....	10	.....	.....	.....
Phoenix Mfg. Co., Awnings and screens	2	.....	23	4	27	1	.....	.....
Phoenix Printing Co. ....	.....	1	5	.....	5	.....	.....	.....
Pierce, E. F., Chandeliers	1	1	7	.....	7	.....	.....	.....
Pietsch, Ferd, Structural iron	1	.....	8	.....	8	.....	.....	.....
Pietsch, Otto, Dye Works	1	1	42	83	130	6	2	120
Plankinton Packing Co., Meat packers	13	9	531	4	535	3	9	675
Podlasky, Joe, Fur dressing .....	.....	1	15	.....	15	.....	1	35
Polecheck, Chas., & Bro., Chandeliers	2	.....	49	4	53	2	.....	.....
Playsted Tool & Die Co. ....	.....	1	13	.....	13	.....	.....	.....
Pollworth, Fred., & Bro., Printing .....	.....	1	12	3	15	1	.....	.....
Passom, Peter E., Tanks	2	.....	16	.....	16	.....	.....	.....
Pressed Steel Tank Co.	11	.....	139	1	140	.....	4	400
Preus, R. J., Co., Couches and springs	1	.....	34	1	35	6	.....	.....
Prinakow, M., Pants .....	.....	1	4	9	13	.....	.....	.....
Prime Steel Co., The, Steel castings	2	.....	12	.....	12	.....	1	50
Prinz & Rau Mfg. Co., Mill machinery .....	.....	3	64	5	69	.....	1	85
Pritzko, A., Clothing	1	.....	2	13	20	.....	.....	.....
Quinn Blank Book & Stationery Co. ....	.....	1	10	8	18	2	.....	.....
Radtke Bros., & Kortsch, Printing .....	.....	1	32	.....	32	3	.....	.....
Rauschenberger, John & Co., Rope and twine	9	.....	32	.....	32	12	1	35
Rauwold, Jos., Church furniture .....	.....	1	9	.....	9	.....	.....	.....
Razall Mfg. Co., Book bindery	1	51	13	69
Rediske Vinegar Co.	4	8	8	1	1	50
Reinhart Mitten Co.	1	23	57	80	11	2	130

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TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
MILWAUKEE—Continued.								
Reliance Beveling & Silvering Co., Glass grinding		1	12		12	1	1	60
Reliance Boiler Works	3		25		25	2	1	80
Reliance Laundry		1	10	31	41	10	1	80
Reliance Mills, Flour and feed	2	1	22		22		3	600
Rialto Elevator Co., Grain	1	2	27		24		3	903
Rice & Friedman, Clothing	2	2	24		234	261	43	150
Rich Shoe Co., The		1	100	75	175	18	1	
Ricketson Mineral Paint Co.	5		16		16		1	80
Riddell, M. H., Papier mache.		1	4	17	21			
Riemer, A. H., Shoe Co.		1	6	4	10			
Right Laundry, The	2		3	23	26		1	30
Rilling, J. E., Co., Upholstery		1	24	3	27	1		
Ritter, Louis, Bar fixtures	1	1	10		10			
Riverside Printing Co.		1	78		78	8	2	200
Robinson Electro Plating Works	1		8		8			
Rockwell Mfg. Co.	8	6	253		253	19	6	460
Rohn, George F., Electrical contractor		1	11	1	12			
Rohn, Robert, Co., (The) Plumbers' supplies	3	1	33	2	35			
Romadka Bros. Co., Trunks and valises	1	4	270	30	300	47	2	120
Rosenberg Elevator Supply Co., Machine shop	1		4		4			
Rosenberg, S., & Co., Clothing		1	7	2	9			
Ruesch, Jake, Machine shop	1		4		4		1	10
Rundle Mfg. Co., Enamel ware	6	2	145		145	4	2	160
Rundle Spence Mfg. Co., Plumbers' supplies		1	142	3	145	4	1	60
Saint Louis Mfg. Co., Wrappers	1			8	8			
Salentine, H., Feed mill	2	1	4		4			
Salisbury Laundry		1	8	19	27	1	1	100
Sanders & Spellenberg, Coffee roasting	1		9	2	11			
Sanitary Laundry	1		1	6	7		1	20
Satchel Frame Mfg. Co., The		1	50		50	15		
Schaaf, Frank, Sausage		1	13		13		1	30
Schaeffer Co., Granite monuments	3		12		12			
Schlitz Brewing Co.	23	17	1,151	241	1,392	288		
Schloemer, H., Co., Soda water	1		3		3			
Schmidt, A. R., Electrical contractor	1		11	1	12	1		
Schmidt, P., & Co., Cut stone	5		45		45		3	95
Schmidt, W. H., & Son, Sash and doors	2	1	24		24			
Schmidt & Sons, Galvanized iron	1	1	6		6			
Schneck Machine Co.	1		14		14		1	40
Schoen & Walter, Grips and trunks	3		37	5	42	4		
Schoeneker Boot & Shoe Co.	1	2	95	40	125	15	2	100
Schok, H., Wagons	1		5		5			
Schroeder Lumber Co.	9		175	3	178		3	390
Schuelke, Wm., Organ Co.	1	1	10		10			
Schuppert & Joeller Co., Printing		1	10		10	1		
Schulz, Erdmann, Contractor	1		60		60			
Schuster Bros., Tobacco warehouse		1	18	50	68	16		
Schwab & Anderson Co., The, Coal machinery	1		30		30		1	100
Schwab, R. J., & Son Co., Furnaces	2	4	117	3	120	1	1	150
Schwab Machine & Iron Works	1		15		15			

TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total.
MILWAUKEE—Continued.								
Schwaab Stamp & Steel Co., Scales, etc.		1	29	1	30	5		
Schwalbach, M., Tower clocks	1		2		2			
Schwartzberg, H. A., Cigar boxes	3		17	8	25	1	1	35
Scotts Machinery Mfg. Co.	1		4	1	5	1		
Seaman, W. S., Co., Sash and doors	3	1	60		60		1	100
Seeboth, A. S., Wool cleaning	1		8		8		1	120
Seeboth Bros. Co., Scrap iron	3	1	83	6	44		2	80
Seeboth, G. A., Cotton felting	5		7		7		1	110
Seeboth, W. D., Printing		1	4		4			
Seelman, Geo., & Sons, Bindery		1	46	79	125	23		
Seidenberg & Hays, Ladies' clothing		1	36	40	76			
Sekowsky, H., Surgical instruments	1		1		1			
Semet & Solway Co., Coke & Gas	18		350		350		4	1,200
Sentinel Bindery, The		1	15	30	45	2		
Sentinel Publishing Co., The, Newspaper		1	178	22	200			
Sercomb, C. A., Mfg. Co., Soap		1	8	3	11	1		
Shaver, Jos., Granite & Marble Co., Monuments	4		30		30		1	75
Sheriffs Mfg. Co., Propeller	5		30		30		1	40
Siebers & Pederson Co., Pattern makers		1	16		16			
Sight Feed Oil Pump Co., Lubricators			32	1	33			
Signal Phone Co., Fire alarm apparatus		1	20		20			
Skobis Bros., Structural iron	3		40		40		1	85
Skubal & Schaur, Wagons	1		14		14			
Slocum Straw Works, Hats		1	35	90	125			
Smith, A. O., Co., Automobile parts	9	3	427	3	430	13	6	430
Smith Machine Co., Machine shop	2		60		60			
Smith & Post Co., Stone crushers	2		12		12		1	35
Smith, G. H., Steel Casting Co.	3	4	250		250		3	275
Sonnichen & Steelow, Dies	1		9		9	1		
Soudon Specialty Mfg. Co., Metal polish	1		3	2	5			
South Side Steel & Malleable Casting Co.	2		38		38	2	1	120
Speich Stove Repair Co.	1		30		30	1		
Spencer Mfg. Co., Brass foundry	1		12		12	1		
Standard Bedding Co.		1	41	9	50	4		
Standard Brass & Iron Works	2		10	1	11			
Standard Brick Co.	6		85		85	1	2	190
Standard Candy Co.		2	15	43	58	15		
Standard Coal Docks	3		25		25		2	275
Standard Glove Works, Fur gloves	2		15	20	35			
Standard Ground Key Works, Plumbers' supplies	2		4		4			
Standard Hat Mfg. Co.		1	1	1	2			
Standard Knitting Co.	2		8	30	38	6		
Standard Separator Co., Cream separators		1	11	1	12	2		
Standard Telephone & Elec. Co., Telephones and switchboards		1	11		11	3		
Standard Victory Laundry	1		2	26	28	4	1	40

TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
MILWAUKEE—Continued.								
Starke, Dredge & Dock Co., Dredging	10		75		75		1	25
Star Tannery, The	5	2	100		100		3	225
Steam Appliance Co.	1		12		12		1	35
Stehling, Chas. H., Co., Tanks and vats	1		30		30		1	80
Steinkopf & Son, Awnings and tents		1	4		4			
Sterling Wheelbarrow Co.	3		25	1	26		1	35
Stern, Bernard & Son, Merchant millers	3	3	65	1	66		2	250
Sternberg Mfg. Co.		1	25	2	27	3		
Stolper, Chas., Cooperage Co., Mfg. of beer kegs	7		50		50		2	170
Stone Coal & Coke Co., Coal docks.	4		20		20		4	300
Story Bros., Stone quarry	7		40		40		2	250
Strassburg, Chas., Brooms	1		3		3			
Stroh Molding & Electric Casting Co.		1	24	1	25	1		
Struck Bros., Fuel	3		4		4		1	10
Sullivan, Henry, Engraving		1	11	7	13	1		
Tabor Glove Co.		2	138	252	390	53	2	100
Tanisch Co., Job printing		1	5		5	1		
Teweles-Gundman & Co., Furniture		1	25		25			
Teweles, L., & Co., Seed elevator		1	11	1	12			
Tews Bros., Lime, cement and stone	4		17		17			
Thomas Furnace Co., Pig iron	4		185		185		5	2,000
Toepfer, W., & Sons, Brewers' iron works	4		39		39		1	50
Towell Bros., Printing	1		9	1	10			
Trenkamp, F., & Co., Soap factory	1		8		8		1	45
Trinkner, Henry, Wagons	2		10		10			
Trostel, Albert, & Co., Tannery	7	6	450		450	5	6	1,100
Twentieth Century Press, Printing	1		29	26	55	8		
Turner Tanning Machine Co.	2		5	1	6			
Uhllein Bros., Malt	3	2	19		19		2	175
Ulrich Carpet Cleaning Works	1		2	1	3			
Union Bottling Works, Carbonated beverages	1		5		5			
Union Electric Mfg. Co., Electric devices	1		15	1	16	2		
Union Refrigerator & Transit Co., Refrigerator cars	7		100		100		1	100
United States Gypsum Co., Wall paper	3		20		20		2	150
Unit Web Suspender Co.		1	1	4	5			
Usinger Fred, Sausage factory	3	1	18	5	23		1	40
Van Dyke Knitting Co.		2	150	7	157	22	2	120
Vaughn Atlantic Laundry	1	1	37	3	40	5	1	60
Vera Chemical Co.	4	1	12		12		1	100
Vilter Mfg. Co., The, Machinery	9	1	486		486	4	3	500
Voight, F. & H., Brooms	2		5		5	1		
Voss, Herman Co., Bindery		1	50	79	129	17		
Wadhams Oil & Grease Co.	2		23		23	1	2	70
Wagner, A. F., Structural iron	3		28		28		1	90
Waldeck, Ed., & Co., Jewelry Mfg.		1	5		5			
Wallace, Smith & Co., Harness factory		2	220	94	314	37		
Wallman Mfg. Co., Oil tanks	2		25	5	30	3		
Waltham Piano Co.		1	60	1	61			
Wambold, H. E., Brass foundry	1		7		7			

TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total L. P.
MILWAUKEE—Continued.								
Washington Cutlery Co.....	1		24	1	25			
Weeks, M. S., Carriages.....	1		5		5			
Weigell, A., & Son, Mattress factory		1	27	8	35	4		
Weil-Buell Co., Shirts.....		1	1	1	5			
Weinbrenner, Albert, Co., Shoes...		1	30	50	130	12		
Weingandt, A., Woolcarding	1		2		2			
Weis & Schmidt Pottery Co.....	4	1	10		10	1	1	35
Weise, Paul, Co., Upholstery.....	2	1	25	4	29			
Weisel & Co., Sausage.....	5	1	65		65		2	180
Weisleder, Herman, Co., Copper-smiths	1		6		6		1	18
Wells, F. A., Machine shop.....	1		3		3			
Wendt, F., & Co., Grain and feed	1		6		6			
Wenzel, J. H., & Co., Job printing	2		14		14	1	1	12
Wenzell & Kundman, Book bindery		1	4	4	8	1		
Werner, A., Silversmiths.....		1	3		3			
Werrbach, Louis, Soda water.....	1		9		9	1	1	15
Western Auto Supply Co.....	2		24	1	25			
Western Fur Co.....		1	12	10	22	2		
Western Garment Mfg. Co.....	1		2	15	17	2		
Western Grip & Trunk Co.....	1	1	57	18	75	12	1	43
Western Hardware Mfg. Co.....	6		120	4	124	5	2	160
Western Leather Co., Insoles and shoe heels	2	2	40	173	213	41	2	200
Western Malleable Iron Works.....	6		100		100	10	1	150
Western Novelty Co., Binding.....		1	10	17	27	1		
Western Ornamental & Specialty Co., Cornices	1		3		3			
Western Overalls Co.....		1	1	15	16	1		
Western Rawhide & Belting Co., Tannery	3	1	30		30	7	1	65
Westlake, De-la-Hunt & Smith, Job printing		1	14		14			
Westphal, F., & Co., Files and rasps	2		50		50	3	2	150
West Side Iron & Wire Works, Wire goods	1		3		3			
West Side Mfg. Co., Sash and doors	7		53		53		1	100
West-Williams Co., Bindery.....		2	18	18	36	7		
Wetzel Bros. Printing Co.....		1	52	16	68	2	2	150
Wetzlers Sausage Mfg. Co.....	1		12		12			
Weyenberg Shoe Mfg. Co.....		1	85	34	119	3		
White Star Suspender Co.....		1	4		4	1		
Whitnall Coal Co.....	5		85		85	2	4	350
Whitnall-Rademacher Supply Co., Cement	8		35		35			
Widmeyer, J., & Co., Blacksmiths	1		12		12			
Wiener, E., Furniture.....		1	38	4	42	1		
Wilbur Stock Food Co.....		1	17	54	71			
Wilcox, John, Stone cutting.....	5		10		10		1	50
Willer Mfg. Co., Sash and doors...	3	1	63	2	65	3	2	180
Willmanns Bros. Co., Lithographing		1	59	5	64	6		
Wiltzius, M. H., Co., The, Church goods		1	30	48	78	5		
Winding & Geselschap, Paving and roofing	2		15		15			
Windsor Mfg. Co., Lead pipe.....	1		8		8		1	20
Wineland Laundry	1		2	3	5		1	8
Wisconsin Bank Note Co., Lithographing	1		12		12			

FACTORY INSPECTION.

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TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
MILWAUKEE—Continued.								
Wisconsin Compressed Air House Cleaning Co.	1	.....	5	1	6	.....	.....	.....
Wisconsin Electric Construction Co., Contractors	1	.....	13	.....	13	.....	.....	.....
Wisconsin Furniture Co., Tables...	5	1	75	2	77	5	2	160
Wisconsin Gas Mantel Mfg. Co.....	.....	1	4	.....	4	.....	.....	.....
Wisconsin Iron & Wire Works, Office fixtures	1	1	95	1	96	5	2	250
Wisconsin Knitting Works.....	.....	1	8	35	43	1	1	70
Wisconsin Lakes Ice & Cartage Co.	3	.....	130	.....	130	.....	1	14
Wisconsin Machinery & Mfg. Co....	1	.....	2	.....	2	.....	.....	.....
Wisconsin Malleable Iron Co.....	12	.....	498	.....	498	17	2	250
Wisconsin Overall Co.	1	.....	3	13	15	.....	.....	.....
Wisconsin Pattern Works.....	1	.....	3	.....	3	.....	.....	.....
Wisconsin Pharmaceutical Co., Chemicals .....	.....	1	4	2	6	1	.....	.....
Wisconsin Shoe Co., Infants' shoes	1	.....	4	8	12	4	.....	.....
Wisconsin Specialty Co., Machinery	.....	1	6	.....	6	.....	.....	.....
Wisconsin Telephone Co.....	1	1	35	.....	35	.....	.....	.....
Wisconsin Wood Works Co., Interior wood works.....	.....	1	25	.....	25	.....	1	60
Wittenberg-Boehm Co., Book bindery .....	.....	1	5	10	15	1	.....	.....
Wnentkowski, Jos., Shoes and slippers .....	.....	1	4	2	6	.....	.....	.....
Wollager Mfg. Co., Office fixtures..	4	3	110	.....	110	.....	2	150
Woods Steam Laundry.....	.....	1	2	25	27	1	1	25
Worden-Allen Co., Structural iron.	4	.....	190	1	191	.....	2	150
Wright & Joys Co., Printing.....	.....	1	73	17	90	2	.....	.....
Wrinsh & Herman Shoe Co.....	2	.....	28	20	43	8	.....	.....
Wright Lumber Co.....	5	.....	40	.....	40	.....	2	150
Wrought Washer Co., Washers.....	4	.....	77	15	92	4	3	300
Yewdale, J. H., & Sons, Printing....	.....	1	90	25	115	6	.....	.....
Young, B., Horse collars.....	1	.....	27	.....	27	.....	.....	.....
Young, Benjamin, Harness factory.	.....	1	164	6	170	2	.....	.....
Young Churchman Co., Printing....	.....	1	13	7	20	.....	.....	.....
Young Specialty Co., Water heaters	2	.....	3	.....	3	.....	.....	.....
Zahn, H. H., & Co., Printing.....	.....	1	6	.....	6	.....	.....	.....
Ziegler, Geo., Co., Candy.....	.....	3	117	221	338	111	3	240
Zimmerman Bros. Clothing Co., Clothing .....	.....	1	5	4	9	2	.....	.....
Zimmerman Laundry	1	.....	1	10	11	.....	1	30
Zimmermann & Schalling, Printing.	1	.....	3	.....	3	.....	.....	.....
Zohrlaut, Herman, Leather Co., Tannery	5	4	175	50	225	.....	5	800
Zwengel, Henry, Jewelry.....	.....	1	8	.....	8	1	.....	.....
Zwietusch, Otto, Co., Soda water..	2	1	20	.....	20	1	1	50
Total	1,966	665	55,737	10,665	66,402	3,827	834	96,970
MINERAL POINT, IOWA CO.								
Artificial Ice & Steam Co.....	4	.....	5	.....	5	.....	2	400
Glahr & Theis, Feed mill.....	3	.....	3	.....	3	.....	.....	.....
Homeright Mining Co.....	1	.....	6	.....	6	.....	1	30
Liverpool Zinc Mining Co.....	1	.....	20	.....	20	.....	1	45
Martin, J. C., & Co., Feed mill....	.....	1	2	.....	2	.....	.....	.....
Mineral Point Electric Light Co...	3	.....	2	.....	2	.....	2	210
Mineral Point Water Works.....	1	.....	1	.....	1	.....	.....	.....

TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
MINERAL POINT—Continued.								
Mineral Point Zinc Co.....	39	3	250	2	252	.....	4	400
Mineral Spring Brewery.....	7	1	6	.....	6	.....	1	80
Ross, John, Zinc Mining Co.....	1	.....	14	.....	14	.....	.....	.....
Spensley & Hoar, Creamery	2	.....	2	.....	2	.....	1	12
Total	62	5	311	2	313	.....	12	1,177
MONDOVI, BUFFALO CO.								
Advancement Association, Elevator.	1	.....	2	.....	2	.....	.....	.....
Buffalo County News.....	1	.....	2	1	3	.....	.....	.....
Cargill, W. W., Co., Elevator.....	.....	1	1	.....	1	.....	.....	.....
Farmers Co-operative Creamery Co.	1	.....	2	.....	2	.....	.....	30
Fischer's Roller Mills	1	1	2	.....	2	.....	1	25
Knutson Elevator Co.....	2	.....	3	.....	3	.....	.....	.....
Mondovi Dairymen's Ass'n, Creamery	1	.....	2	.....	2	.....	1	20
Mondovi Herald, Printing.....	1	.....	2	1	3	.....	.....	.....
Mondovi Milling Co.....	.....	1	3	.....	3	.....	.....	.....
Northern Grain Co., Elevator.....	1	.....	2	.....	2	.....	.....	.....
Total	9	3	21	2	23	.....	3	65
MONICO, ONEIDA CO.								
Lukey, James, Saw mill.....	1	.....	20	.....	20	.....	2	700
Total	1	.....	20	.....	20	.....	2	700
MONROE, GREEN CO.								
Bordens Condensed Milk Co.....	5	.....	17	10	27	.....	3	300
Fitzgibbons Bros., Wagons.....	1	3	52	3	35	.....	.....	.....
Green County Herald.....	1	.....	4	.....	4	.....	.....	.....
Lanz & Son, Carriages.....	7	.....	18	.....	18	.....	3	105
Monroe Bottling Works.....	1	.....	4	.....	4	.....	.....	.....
Monroe Brewery	4	1	15	.....	15	.....	2	250
Monroe Times, Printing.....	1	.....	4	2	6	.....	.....	.....
Monroe Daily Journal & Gazette...	1	.....	4	4	8	.....	.....	.....
Monroe Sentinel	1	.....	6	.....	6	.....	.....	.....
Monroe Electric Light Co.....	2	.....	2	.....	2	.....	2	300
Monroe Gas Co.....	1	.....	1	.....	1	.....	.....	.....
Monroe Model Mill, Feed.....	2	.....	4	.....	4	.....	1	50
Monroe Planing Mill.....	8	.....	12	.....	12	.....	1	50
Monroe Steam Laundry.....	1	.....	2	3	5	.....	2	37
Pandow, Emil, Wagons and carriages	3	.....	5	.....	5	.....	1	6
Total	39	4	139	22	152	.....	13	1,093
MONTELLO, MARQUETTE CO.								
Fox River Feed Mill.....	1	.....	2	.....	2	.....	1	22
Montello Creamery Co.....	1	.....	1	.....	1	.....	1	10
Montello Express, Printing.....	1	.....	1	1	2	.....	1	5
Montello Granite Co.....	5	.....	150	.....	150	.....	6	350
Montello Roller Mill.....	1	2	2	1	50
Norcross Bros., Planing mill.....	1	2	2	1	30
Total	10	158	1	159	11	467

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TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
MONTFORT, GRANT CO.								
Gould, F. A., Machine shop.....	1		2		2			
Montfort Mail, Printing.....	1		2		2			
Total	2		4		4			
MOSINEE, MARATHON CO.								
Dessert, Jos., Lumber Co.....	2		40		40		4	220
Total	2		40		40		4	220
MUSCODA, GRANT CO.								
Marcus, H., Telephone pins.....	1		16		16			
Muscoda Mfg. Co., Tables.....	3		12		12		1	50
Valley Voice, The, Printing.....	1		2	1	3			
Total	5		30	1	31		1	50
NASHVILLE, FOREST CO.								
Rogers, W. H., Lumber Co.....	5		40		40		2	150
Total	5		40		40		2	150
NECEDAH, JUNEAU CO.								
Necedah Republican, Printing.....	1		2		2			
Reed, F. M., Electric light plant..	2	1	5		5		1	60
Total	3	1	7		7		1	60
NEENAH, WINNEBAGO CO.								
Austin, James, Contractor.....	1		4		4		1	25
Aylwards & Sons Co., Foundry.....	3		6		6			
Badger Mill, Paper	2	1	32	3	40		4	490
Bergstrom Paper Co., Paper mill..	12		64	38	102		5	800
Bergstrom Stove Co.....	4	3	64		64		1	80
Blair, T. B., Printing.....	1		2	1	3			
Globe Mills, Paper	2		36	3	39			
Jamison, Robert, Machinery.....	1		2		2			
Jersild Knitting Co.....	3	1	5	50	55	1		
Johnson Bros., Machinery.....	1		5		5			
Krueger & Lachmann Co., Flour mill	3	2	8		8		1	100
Lindahl, Wm., Planing mill.....	2		5		5			
Neenah Brass Works	1		5		5			
Neenah Brewery	1	1			1			
Neenah Knitting Co.....	1		2		2			
Neenah Mill, Paper.....	4	1	56	14	70		4	500
Neenah Paper Mill.....	8		67	13	80		3	490
Neenah Shoe Co.....		1	25	20	45	2		
Neenah Times, Printing.....	1		4	1	5			
News Publishing Co.....	1		3	4	7			
Wickert, C. F., Sash and doors.....	5	1	19		19		1	65
Total	57	11	415	168	583	3	20	2,466

TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. P.
NEILLSVILLE, CLARK CO.								
Cash, O. K. Laundry	1		1	2	3		1	16
Der Dutsch Amerikaner, Printing..	1		1	1	2			
Electric Light & Water Co.....	1		2		2		1	100
Johnson Mfg. Co., Hubs and staves	3							
Leason, A. L., & Son, Windmills...	1		5		5		1	12
Marsh, A. B., & Co., Elevator and feed mill	1	1	2		2			
Neillsville Brewery	3	1	3		3		1	35
Neillsville Cash Milling Co., Flour.	2	1	4		4		1	70
Neillsville Planing Mill.....	1		3		3		1	80
Republican Press	1		4		4			
Times, The	1		3	2	5			
Wisconsin Furniture Co.....	5	1	99	6	105	5	2	190
Wolf & Kormann, Wagons.....	3		5		5		1	18
Total	24	4	132	11	143	5	9	491
NEKOOSA, WOOD CO.								
Nekoosa Paper Mill.....	13	2	340	10	350		7	1,350
Wood County Times.....	1		2	1	3			
Total	19	2	342	11	353		7	1,350
NESHKORO, MARQUETTE CO.								
Pond Lily Roller Mills.....	1		3		3			
Total	1		3		3			
NEW HOLSTEIN, CALUMET CO.								
Calumet Reporter, Printing.....	1		3		3			12
Cargill, W. W., Co., Elevator.....	1		1		1			
Dumke, C. F., & Co., Flour.....	1		3		3		1	65
Dawson, John, Mfg. Co., Gas en- gines	3		30		30			
New Holstein Co-operative Cream- ery	1		2		2		1	20
Timm, H. C., & Co., Elevator.....	2		2		2			
Total	9		41		41		2	85
NEW LISBON, JUNEAU CO.								
Bierbauer, H., Brewery.....	7		3		3		1	20
Total	7		3		3		1	20
NEW LONDON, WAUPACA CO.								
Excelsior Flour Mill.....	1		5		5		1	60
Frimuth, A., & Son, Tanks.....	1		7		7			
Freiburger & Sons, Wagons.....	1		6		6		1	10
Hatten Lumber Co., Saw mill	4		80	2	82		5	250
Krupstein, Theo., Co., Brewery	1	2	10		10		1	60
Madson, H. P., Machine shop.....	2		2		2		1	10
Model Steam Laundry.....	1		1	4	5		1	20

TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
NEW LONDON—Continued.								
New London Boat Works.....	1		2		2			
New London Bottling Works.....	2		3		3		1	16
New London Condensing Co., Condensed milk.....	1		5		5		2	110
New London Light & Water Co.	1		4		4		2	325
New London Iron Works, Machine shop.....	2		2		2			
New London Press, Printing.....	1		5		5			
New London Republican.....	1		2	4	6			
Page & Lyon Co., Bee hives.....	6		35		35		1	70
Sing, Chas., Laundry.....	1		1		1			
Wisconsin Chair Co.	6	3	244	24	268	18	3	300
Total.....	33	5	414	34	448	18	19	1,235
NEW RICHMOND, ST. CROIX CO.								
Diser, C. J., Machinist.....	1		2		2			
Farmers' Grain Co.	1	1	3		3			
Jagger, H. M., Sash and doors.....	1		2		2			
New Richmond Roller Mills.....	2	2	20	1	21			
New Richmond Water & Light Co.	1		1		1			
News, The, Printing.....	1		2	1	3			
Northern Grain Co.	3		3		3			
Republican-Voice, Printing.....	1		2		3			
Ross, J. L. Co., Elevator.....	3		2	1	3			
Superior Creamery Co.	1		4		4		1	30
Traur & Barrett, Wood working....	1		15		15			
Willow River Lumber Co., Saw mill	2		150		150		5	200
Total.....	18	3	207	3	210		6	230
NIAGARA, MARINETTE CO.								
Kimberly-Clark Paper Co., Paper mill.....	15		414	11	425		6	1,200
Total.....	15		414	11	425		6	1,200
NORTH MILWAUKEE, MILWAUKEE Co.								
Luther Bros. Co., Hardwood specialties.....	1		9		9			
Milwaukee Gas Light Co.	2		16		16		2	75
Minn Billiard Table Mfg. Co.	1		40		40			
Poppert, Geo. Mfg., Sash, doors and blinds.....	6		85		85	3	3	260
Smith & Barnes Piano Co.	6	2	99	1	100	4	2	300
Wagon Mfg. Co., Hardware specialties.....	2		75	1	76		1	75
Wisconsin Bridge & Iron Works....	11		257	3	260	5	3	350
Total.....	29	2	581	5	586	12	11	1,080

TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
NORWALK, MONROE CO.								
Norwalk Creamery Co.	2		1		1		1	18
Norwalk Mill & Grain Co., Flour mill	1		3		3		1	75
Norwalk Star, Printing	1	1	1		1			
Total	4	1	5		5		2	93
OCONOMOWOC, WAUKESHA CO.								
City Brewery	2		6		6		1	20
City Electric Light & Water Co.	1		5		5		3	300
Eclipse Steam Laundry	1		1	11	12		1	25
Flotow, L., Planing mill	3		5		5		1	30
Hausser & Walsh, Machine shop	1		4		4			
Holstein, W. A., Elevator	1	1	2		3		1	20
La Belle Roller Mill, Flour and feed	3	1	3		3			
Milwaukee Elevator Co.	2		2		2			
Moldenhaur, W. F., Repair shop	2		13		13			
Oconomowoc Enterprise, Printing	1		3	2	5			
Wisconsin Free Press, The	1		4	1	5		3	300
Total	23	2	49	14	63		10	695
OCONTO, OCONTO CO.								
Alart & McGuire, Pickles	1		4		4			
Enquirer, The	1		3	2	5			
Great Northern Machine Co., Posts	1		6		6		1	30
Holt Lumber Co., Saw and planing mill	21		400		400	5	12	950
Oconto Brewing Co.	8	2	23	1	24		1	75
Oconto County Enterprise	1		3	3	6			
Oconto County Reporter	1		4	4	8			
Oconto Electric Light Co.	3		3		3		3	200
Oconto Lumber Co., Saw and planing mill	17		325		325		9	990
Oconto Water Works Co.	4		4		4		3	200
Pembleton & Gilkey Co., Lumber	3		62		62	2	4	120
Peoples Land & Mfg. Co., Light and power	2		6		6		3	350
Piene, A., Elevator	3		6		6			
The Oconto Co., Lumber	6		130		130		9	900
Wisconsin Pail Co.	2		40		40	8		
Total	74	2	1,019	10	1,029	15	45	3,315
OCONTO FALLS, OCONTO CO.								
Cota, George, Elevator	4		2		2			
Falls Mfg. Co., Paper and pulp	17	1	160	5	165		15	1,900
Goggins, B. W., Machine shop	2		3		3			
Herald, The	1		1	2	3			
Oconto Falls Cabinet Factory, Sash and doors	1		2		2			
Oconto Falls Machine shop	1		4		4			
Oconto Falls Wooden Ware Co., Pails	4		25		25	3	1	80
Union Mfg. Co., Pulp	7		30		30	1	1	100
Total	38	1	227	7	234	4	17	1,180

TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
ODANAH, ASHLAND CO.								
North Western Cooperage Co., Stave factory	1		40		40	2	2	150
Stearns, J. S., Lumber Co.	11		443	1	454		9	975
Total	12		483	11	494	2	11	1,125
OGEMA, PRICE CO.								
Ogema Lumber Co.	2		25		25		2	250
Ogema Creamery Co.	1		2		2		1	12
Total	3		27		27		3	262
OMRO, WINNEBAGO CO.								
Austria & Blakesley, Grist mill....	1		2		2			
Earl, Eugene A., Elevator	1		2		2			
Morton, C. C. & Co., Planing mill..	1		4		4			
Omro Co-operative Creamery	1		2		2			
Omro Electric Light Co.	1		2		2		1	75
Oconto Herald	1		1	2	3			
Oconto Journal	1		2	1	3			
Oconto Stamping Co., Machine shop	1		2		2			
Omro Steam Laundry	1		2	1	3			
Total	9		19	4	23		1	75
ONALASKA, LA CROSSE CO.								
Gedney, J. S., Pickle Co.	5	2	66		66	5	2	120
Onalaska Woolen Mfg. Co.	3		4	6	10		1	30
Record, The, Printing	1		3	1	4			
Total	9	2	73	7	80	5	3	150
OOSTBURG, SHEBOYGAN CO.								
Oostburg Canning Co.	7		77	23	100	10	1	80
Oostburg Flour and Grain Co.	5	1	3	1	4		1	65
Total	12	1	80	24	104	10	2	145
OREGON, DANE CO.								
City Laundry	1							
Courier, Richards & Roberts, Cement bricks	1		3		3			
Municipal Water Plant	1		2		2			
Oak Hill Creamery	1		2		2		1	25
Oregon Feed Mill	1		2		2			
Oregon Observer, Printing	1		1	2	3			
Scofield, Ed., Leaf tobacco	1							
Total	7		9	2	11		1	25

TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.			Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	Total h. p.
OSCEOLA, POLK CO.							
Cascade Roller Mill		1	10		10		
Total		1	10		10		
OSHKOSH, WINNEBAGO CO.							
Adams & Davis, Store and office fixtures	1		3		3		
Adams, V., Machine Co., Gas engines	1		3		3		
Arnold Vinegar & Yeast Co.	4		1		1	1	35
Augustine, Henry, Wagons and carriages	2		3		6		
Badger Canning Co.	4		30	200	230	113	50
Badger Plate Co., Plating	1		1		1		
Baldauf, Louis, Repair shop	1		1		1		
Bellard & Son, Bicycles	1		2		2		
Banderobe-Chase & Co., Furniture.	3	3	200	8	208	15	200
Battis Bros., Boilers	4		12		12		
Brand, Robert & Son, Bank fixtures	1	1	50		50		40
Brooklyn Roller Mills	1	1	10		10		135
Buckstaff-Edwards Co., Chairs, etc.	2	4	312		312	12	370
Campbell & Cameron Co., Box factory and lbr.	12		135		105	4	300
Castle-Pierce Printing Co.	1		3	14	17		
Case, J. I., Threshing Mch. Co., Warehouse	1		3		3		
Calloner, Geo. Co., Shingle mill machinery	9		50		50		75
Clark, J. L., Carriage Co.	11		150		150		125
Cook & Brown Lime Co.	1	2	25		25		
Cornelius, Frank, Galvanized iron works	1		3		3		
Davis-Hanson Co., Pumps	9		30		30		40
Diamond Match Co.	17		150	200	350	60	450
Doman, H. H. Co., Boats and gas engines	4		33		33		
Duggan Printing Co.	1		5	1	6		
Edwards-Ihrig Co., Mattresses	1	1	9	9	18		
Fenn & Wachtrap, Bottling Works.	3		3		3		20
Foster-Lotham Mills, Sash, doors and blinds	9	1	242		242	33	500
Galvanized Iron Works	1		7		7		
Gillens Laundry	4		4	21	25		65
Gillingham & Son, Wagons	2		6		6		
Globe Printing Co.	1		10	2	12		
Gould Mfg. Co., Sash and doors	14		130	5	135	5	500
Gunz Bros., Wagons	2		5		5		
Hayes, E. B., Machine Co., Mill machinery	3		50	1	51		
Hicks Printing Co.	1		30	1	31		
Holister, Amos & Co., Lumber	7		165	5	170		240
Horn & Allen, Grist mill	1	1	1		1		90
Irig Machine Co., Machinery	1		15		15		
Johnson, H. E., & Son, Tents and awnings	1		3	1	4		
Jones, J. R., Ladders	1		1		1		
Jones & La Borde, Boats, etc	2		14		14		
Kaufmann, Chas., Repairs	1		5		5		

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TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
OSHKOSH—Continued.								
Kitz, M. M. & Son, Cigar boxes ...	1		9	7	16		1	25
Konrad Emery Wheel Guard Co. ...	1		1		1			
Knippenberg Mfg. Co., Miners' specialties	1		13		12	1		
Lans, Jos., Candy	1		5	1	6			
Lee, Sam, Laundry	1		2		2			
Mathwig, John, Wagons	1		4		4			
McMillan, R. M., & Co., Sash and doors	16		270	2	272	15	3	400
Morgan Co., Sash and doors	8	3	477	33	510	34		
Novelty Key Tag Co.	1		2		2			
Neville, Thos., Carriages	1	1	20		20	1		
Neumeuller, Fred, Bottling works.	1		3		3		1	3
Oshkosh Bedding Co., Mattresses, etc.		1	18	4	22			
Oshkosh Boat Works	4		23	2	25			
Oshkosh Boat & Canoe Co.	1		4		4		1	20
Oshkosh Bottle Wrapper Co.	1	1	7	25	32		1	90
Oshkosh Box Factory	1		1	2	3			
Oshkosh Brewing Co.	17	2	24		24		3	115
Oshkosh Brush Co.	1		6	7	13			
Oshkosh Cistern Factory, Cisterns and tanks	1		2		2		1	12
Oshkosh Clothing Mfg. Co., Overalls and jackets		1	5	50	55			
Oshkosh Daily Times	1		12		12			
Oshkosh Electric Light & Power Co.	1		14		14		4	1,200
Oshkosh Dye Works	1		2	1	3			
Oshkosh Fluff Rug Co.	1		18	4	22			
Oshkosh Furniture Co.	3	2	101	1	102		2	250
Oshkosh Gas Light Co.	5		13		18		2	200
Oshkosh Grass Matting Co.	7		22	45	67		1	40
Oshkosh Logging Tool Co.	7	1	53	2	55	1	1	75
Oshkosh Machine Co., Repair shop		1	2		2			
Oshkosh Muslin Underwear Co.	1		5	70	75			
Oshkosh Northwestern, Printing	1		29	1	30			
Oshkosh Paint Co.	1		5	1	6			
Oshkosh Paper Box Co.	1		2	3	5			
Oshkosh Shirt Co.	1		3	3	6			
Oshkosh Soap Co.	3		7		7		1	20
Oshkosh Tool Mfg. Co.	3		60		60			200
Oshkosh Trunk Co.	3	1	60	10	70		2	400
Oshkosh Water Works	4		3		3		4	200
Paine Lumber Co., Sash and doors.	31	1	1,200	150	1,350	107	14	3,450
Palace Steam Laundry	1		1	7	8		1	20
Paragon Oil & Supply Co., Paints and oils	1		1	1	2			
Parker, Ira & Sons Co., Paint	2		4	1	5			
Pratch, John, Dust collector	1		3		3			
Radford Bros., Sash and doors.	15		230	5	235	14	5	420
Rahr Brewing Co.	4		3		3		2	100
Ransom Mfg. Co., Grinding machinery	1		6		6			
Reliance Boiler Works, Repair shop	2		12		12			
Reliance Flour Mill	3		7		7		1	80
Schmidt, H. P., Co., Flour		1	9		9		1	150
Schmidt Bros., Trunk Factory	3	2	107	58	165	16	1	100
Schram, A., & Sons Co., Furniture	1	1	53	7	60		1	80
Schneider, Louis, Bottle covers.	3		10	35	45	1	1	20
Sing, Wah, Laundry	1		1		1			
Sitzberger, Aug., Cistern tanks.	2		1		1			

TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
OSHKOSH—Continued.								
Sperlich, Aug., & Son, Cistern tanks	1		2		2		1	20
Standard Mirror Co.	1		12		12			
Star Machine Works, Saw mill machinery	3		20		20	1	1	25
Starkweather, R. R., & Co., Wood-working	7		55	1	56		1	80
Strech, A., & Bros., Wagons and ice carts	2	1	68	1	69		1	100
Strech, Gabriel, Wagons	5	1	40	1	41		1	50
Termaat & Monahan Co., Gas engines	8		40	1	41			
Thiemann, Arthur, Plating	1		2		2			
Thom, E., & Co., Bottling	1		4		4		1	12
Troy Steam Laundry	1		4	20	24		1	30
U. S. Engine Works	1		2		2			
Walker & Challoner Co., Machine shop	1		5		5			
Warwick Coal Co.	2	4	4		4			
Wenrich, H. F., Monuments	3		15		15			
Wilkins-Challones & Co., Mill machinery	3		40		40		1	75
Williamson & Libby Co., Sash and doors	5		180		180		3	360
Wilson Bros., Wagons	1		6		6			
Winnebago Traction Co., St. Railway	3		32	2	64		3	750
Wisconsin Art Glass Co., Glass	1		20		20			
Wisconsin Pulp Plaster Co.	1	1	8	1	9		1	60
Wisconsin Telegraph, Printing	1		8	4	12			
Wymans Sleeve Protector Co.	1			11	11			
Total	370	40	5,475	1,048	6,523	438	104	12,352
OWEN, CLARK CO.								
Owen, John L., Lumber Co.	10		252	3	255		5	395
Total	10		252	3	255		5	395
PADUS, FOREST CO.								
Hammes, John, Saw Mill	1		12		12		1	50
Reedsburg Lumber Co., Lumber and staves	1		15		15		1	80
Total	2		27		27		2	130
PALMYRA, JEFFERSON CO.								
Palmyra Roller Mills, Manufacturing flour	1		2		2			
Total	1		2		2			

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TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
PARDEEVILLE, COLUMBIA CO.								
Chandler, J. G., Electric lights....	1		1		1			
Hughes, Wm., Elevator	1		1		1			
Lynch & McKay, Elevator	1		2		2			
Pardeeville Roller mills, Mfg. flour	1		2		2			
Pardeeville Times, Publishing	1		1	1	2			
Pardeeville Water Works	1		1		1			
Total	6		8	1	9			
PARKFALLS, PRICE CO.								
Excelsior Mfg. Co.	4		40		40		3	225
Flambeau Paper Co., Paper Mills..	8		94	6	100		6	600
Flambeau Paper Co., Paper and pulp	6		68	6	74		6	500
Flambeau Paper Co., Pulp	5		20		20		1	100
Great Northern Excelsior Co.	4							
Park Falls Creamery	1		2		2		1	20
Park Falls Herald, Publishing	1		2	1	3			
Roddis Lumber Co.	7		68	2	70		5	400
Smith & Monroe, Lath mill.....	1		9		9		1	80
Williamson & Libby Lumber Co....	3		50		50		2	250
Winch, E. E., Stave and veneer mill	4		45		45			
Winnebago Realty Co., Shingles....	2		10		10		2	190
Total	46		408	15	423		27	2,365
PEMBINE, MARINETTE CO.								
Minn., St. P. & St. Ste. M. Railway Co., Pumphouse	1		1		1			
C. M. & St. P. Ry. Co., Pumphouse	1		1		1			
Total	2		2		2			
PEPIN, PEPIN CO.								
Larson & Swanson, Grain elevator..	1		1		1		1	3
Pepin Pickling Co.	2		7		7			
Schrueth Bros., & Engil, Wagons and sleighs	1		3		3		1	35
Total	4		11		11		2	38
PESHIGO, MARINETTE CO.								
Perley, Lowe Co., Planing mill	6		100		100			
Peshigo Lumber Co.	6		175		175		7	900
Peshigo Milling Co., Flour mill.....		1	4		4			
Peshigo Planing Mill	7		15		15			
Peshigo Times, Publishing	1		2	2	4			
Wisconsin & Michigan Ry., Railway shops	8		25	1	26		2	90
Yep Sin, Laundry	1		1		1			
Total	29	1	322	3	325		9	990

TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs of age.	No.	Total h. p.
PHILLIPS, PRICE CO.								
Davis, John R., Lumber Co.	11		325		325	7	9	900
Freedel, E., Cabinet factory	1		4		4			
Miller, Geo. P., Lumber Co.	3		40		40		1	125
Phillips Bee, Publishing	1		2		2			
Phillips Times, Publishing	1		3		3			
Total	17		374		374	7	10	1,035
PLAINFIELD, WAUSHARA CO.								
Plainfield Creamery Co.	1		2		2		1	12
Storks & Skeel, Flour and electric light		1	3		3			
Sun, The, Publishing	1		2	1	3			
Total	2	1	7	1	8		1	12
PLATTEVILLE, GRANT CO.								
Boll, W. J., Repair shop	1		1		1			
Enterprise Zinc Mining Co.	1		70		70		2	140
Enterprise Lead & Zinc Mining Co.	3		66		66		4	310
Galena Iron Works Co.	2		13		13		1	60
Hawley Zinc Mining Co.	1		12		12		1	80
Hodge Zinc Mining Co.	1		14		14		1	70
Hoppe, Fred, Brewery	8	2	6		6		1	65
Hunt, Paul, Machine shop	1		3		3			
Journal, The, Publishing	1		3	2	5			
Morning Star Mining Co.	1		6		6		1	40
Platt Zinc Mining Co.	1		35		35		2	309
Platteville Butter Tub Factory	4		4		4		1	8
Platteville Electric & Power Co.	4		4		4		3	363
Platteville Concrete Co., Concrete blocks	1		3		3			
Platteville Lead & Zinc Co.	9		8		8		2	169
Platteville Steam Laundry	1		2	5	7		1	10
Platteville Water Works	4		3		3		2	230
Rosellip Bros., Ice and water	1	1	7		7		2	153
Royal Zinc Mining Co.	1		10		10		1	45
Schroeder, W. F., Feed mill	1		4		4			
West Empire Mining Co.	1		11		11		1	89
Total	47	3	290	7	297	1	26	2,088
PLEASANT PRAIRIE, KENOSHIA CO.								
Lafan & Rand Powder Co., Blasting powder	13		64		64		4	600
Total	13		64		64		4	900

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TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
PLYMOUTH, SHEBOYGAN CO.								
Hastman, A. L., Bottling works.....	1		1		1			
Hunson Bros. & Timin Co., Elevator.....	1		1		1			
Kuether Mfg. Co., Cheese boxes.....	3		10		10		1	65
Koch Mfg. Co., Overalls.....	1			10	12			
Plymouth Brewing Co., Brewery.....	7		13	1	14		2	70
Plymouth Box Mfg. Co., Cheese boxes.....	2		10		10		1	60
Plymouth Chair Co.....	7		30	1	31		1	60
Plymouth Cheese Factory.....	1		2		2		1	20
Plymouth City Water Works, Water and light.....	3		3		3		2	300
Plymouth Flour Mill.....	2	1	3		3			
Plymouth Furniture Factory.....	5	2	80		80	2	2	120
Plymouth Marble Works, Monuments.....	1		4		4			
Plymouth Post, Publishing.....	1		1	2	3			
Plymouth Refrigerating Co., Cold storage.....	2	2	11		11		2	150
Plymouth Reporter, Publishing.....	1		2	5	7			
Plymouth Review, Publishing.....	1		2	6	8			
Plymouth Roller Mill.....	2	1	3		3			
Plymouth Steam Laundry.....	1		3	2	5		1	20
Schwartz, Carl.....	3		3		3		1	12
Schwartz Mfg. Co.....	6		20		20		1	75
Thurmann, F., & Co.....	3		11		11		1	35
West Riverside Machine shop.....			2		2	1		
Wolf, P. M., Chairs and tables.....	3	2	20		20		1	80
Total.....	57	8	247	27	274	2	17	1,067
PORTAGE, COLUMBIA CO.								
American Gas Co.....	2		4		4		1	30
Blaske Bros.....	2		3		3		1	15
Burkley & Lueck, Tailoring.....	1		3	3	11			
C. M. & St. P. Railroad.....	5		35		35		2	100
Crystal Bottling Works, Root beer.....	1		3		3			
Cuff, H. A., Feed mill.....	2		2		2		1	30
Epstein Bros., Brewery.....	8		6		6		1	30
Eulberg Bros., Brewery.....	5	1	8		8	1	1	60
Mueller Bros., Granite and marble works.....	1		4		4			
Portage Bottling Co., Soft drinks.....	1		2		2			
Portage Bottling Works, Root beer.....	1		3		3			
Portage City Water Works.....	1		2		2		2	160
Portage Democrat, Publishing.....	1		6	5	11			
Portage Electric Light Co.....	1		2		2			
Portage Fluff Rug Co., Mfg. rugs.....	1		4		4			
Portage Gas Co.....	1		3		3		1	25
Portage Hosiery Co.....	4	2	55	140	175	9	1	80
Portage Iron Works.....	2		6		6		1	10
Portage Novelty Works.....	2		4		4		1	15
Portage Register, Publishing.....	1		4	4	8			
Portage Steam Laundry.....	2		2	7	9		1	30
Portage Underwear Co.....	2		2	21	23		1	12
Purdy Bottling Works, Soda water.....	1		3		3			
Sanborn Brick Co.....	1		20		20		1	18
Stotzer, S., Granite and marble works.....	1		12		12			

TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
PORTAGE—Continued.								
United Cigar Manufacturers.....	1		75	220	295	6		
Wise, Rundschau, Publishing.....	1		4		4			
York, I. W., & Co., Grist mill.....	2	1	15		15		2	150
Zastrow & Koepf, Machinists.....	1		1		1			
Total	58	4	278	400	678	16	18	765
PORT EDWARDS, WOOD CO.								
Edwards, John, Mfg. Co., Paper mill	8		130		130	2	6	1,000
Total	8		130		130	2	6	1,000
PORT WASHINGTON, OZAUKEE CO.								
Aggen, J. D., & Son, Flour mill....	3	1	5		5		1	80
Barth Bros. Mfg. Co., Tables.....	6		35		35		1	100
City Roller Mills, Flour and feed..	2	1	3		3		1	30
Gilson Mfg. Co., Gas engines.....	15		124	1	125	1	2	125
Gunther Bros., Brick and tile.....	4		15		15		2	120
Martin & Webster, Foundry.....	2		5		5			
Mueller Brewing, Malt.....	7		10		10		2	130
Ozaukee Co. Advertiser, Publishing	1		1		1			
Port Washington Brewing Co.....	8		12		12		2	140
Port Washington Herald, Publish- ing	1		1	1	2			
Port Washington Malt House.....	4	2	10		10		2	170
Port Washington Pilot, Publishing.	1		1		1			
Port Washington Star, Publishing.	1			3	3			
Port Washington Zeitung, Publish- ing	1		1	2	3			
Schumacher, Frank, Elevator.....	1	1	3		3			
Schranka, John, Brick.....	3		15		15	2	2	130
Western Implement Co., Trucks....	1		7		7			
Wisconsin Brass Co.....	8		68	9	77		1	100
Wisconsin Chair Co. "A".....	7	7	538	37	575	20	4	600
Wisconsin Chair Co. "B".....	6		122	3	125	4	2	150
Wisconsin Chair Co., Varnish plant	4		3		3			
Total	86	13	979	56	1,035	27	22	2,035
PRAIRIE DU CHIEN, CRAWFORD CO.								
Allen, W. T., Button factory.....	1		1		1			
Artesian Roller Mills, Feed mills...	2		1		1		1	40
Benthin, Charles, Repair shop.....	1		1		1			
Crawford Co. Press, Publishing....	1		2	1	3			
Courier, The, Publishing.....	1		2		2			
Favre, Theo., Pearl buttons.....	1		6		6			
Fort Crawford Button Co.....	1		6		6			
Hunting Elevator Co.....	2	1	8		8		2	100
Iroquois Pearl Button Co.....		1	95		95	1	1	80
Kalinn & Son, Pearl buttons.....	1		2		2			
Kasperek, Joseph, Pearl buttons...	1		6		6			

TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
PRAIRIE DU CHIEN—Continued.								
Knops Bros., Pearl buttons.....	1		2		2			
Lechner, V., Pearl buttons.....	1		10		10			
Pearl City Record, Publishing.....	1		1	2	3			
Prairie City Electric Co.....	3		2		2		2	255
Prairie du Chien Steam Laundry...	1		1	1	2		1	8
Prairie du Chien Union, Publishing	2		2	1	3			
Prairie du Chien Tailoring Co.....		1	10	25	35			
Prairie du Chien Water Works.....	1		1		1			100
Prairie du Chien Woolen Mills.....	1		22	43	65		2	150
Rienow & Morse, Saw mill.....	6		8		8		1	35
Schumann & Menges, Brewery.....	6	1	6		6		2	190
Schweiger, Geo., Soda water.....	1		3		3			
Total	26	4	198	73	271	1	13	868
PRENTICE, PRICE CO.								
Blomberg, H. R., Wagons.....	1		3		3			
Falconer, Frank, Planing mill.....	1		10		10		1	50
King, Ben., Machine shop.....	1		5		5		1	20
Prentice Calumet, Publishing.....	1		2		2			
Prentice Creamery	1		2		2		1	13
News, Publishing		1	1	2	3			
U. S. Leather Co., Tannery.....	7	1	110		110		4	300
Van Dusen, C. D., Saw mill.....	1		30		30		2	100
Total	13	2	163	2	165		9	483
PRESCOTT, PIERCE CO.								
Dill, M. T., Elevator Co.....	1		3		3			
Hamsberger, John, Light.....	1		1		1			
Prescott Electric Light Plant.....	1		1		1		1	50
Prescott Roller Mills, Flour.....	2		3		3		1	60
Prescott Tribune, Publishing.....	1		1		1			
Total	6		9		9		2	110
PRINCETON, GREEN LAKE CO.								
City Electric Light & Power Co....	1		2		2		1	100
Chenney-Neumeyer, Foundry and machine shop	3		2		2		1	20
Ernest, John, Brewery Co.....	4		4		4		1	20
Princeton Butter Tub Co.....	2		6		6			
Princeton Bottling Works, Soda water	1		1		1			
Princeton Roller Mills, Flour and feed		2	3		3			
Republic, The, Publishing.....	1		3		3			
Thomas Overall Co.....	1		3	45	48			
Total	13	2	24	45	69		3	140

TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
RACINE, RACINE CO.								
Adams, E. B., & Sons, Carriage supplies	1		11	1	12			
Advance Mfg. Co., Novelties	1		13	1	19			
Alshuler, Chas., Mfg. Co., Overalls	1		30	255	285	2	1	75
American Seating Co., School furniture	3	4	248	9	257	14	4	375
American Skein & Foundry Co., Skeins and jackscrews	3		150		150		2	180
Art Furniture Mfg. Co.	1		3		3			
Badger Mfg. Co., Cloaks	2		30	90	120		1	40
Barton Mfg. Co., Harness	1		6		6			
Bauman, W. M., Bricks	2		18		18			
Beffel, Frank, Mfg. Co., Pillow sham holders	1		5	1	6	1		
Bell City Basket Co.	1		28		28	5	1	100
Bell City Brewery	1		3		3		1	8
Bell City Malleable Iron Co., Castings	7		322	3	325	10	2	200
Bell City Mfg. Co., Threshing machines	4	1	83	3	86	1	1	150
Bell City Sash & Door Co.	1		15		15			
Bell City Skirt Co.		1	2	20	22			
Brandenburg & Lloede, Soda water	1		3		3			
Brown, W. P., Mfg. Co., Saddlery		3	22		22		1	60
Buridie, F. N., Brick	2		14		14	4		
Carrol, J. C., Coal and wood	1		12		12		1	40
Case Bros., Flour mill	3	1	5		5		1	85
Case Plow Works	1	2	498	8	506	1	4	750
Case, J. I., Threshing Mach. Co.	20	9	1,339	63	1,402	18	9	1,740
Chalmers Foundry Co.	3		10		10			
Chicago Rubber Clothing Co.	2	1	20	80	100	2	2	80
Clancy, J. F., & Co., Coal and wood	9		17		17		2	180
Collier, T. & P., Ironing machines	1		3		3			
Commercial Press Co., Publishing		1	5	13	18	2		
Corse, James, Carpenter shop	1		5		5			
Crotsenburg, W. A., Monuments	1		2		2			
Dempsey, J. W., Coal	1		10		10		1	125
Domestic Mfg. Co., Ironing machines	1		0		0			
Driver, Thos., & Sons Mfg. Co., Sash and doors	2		40		40		1	100
Easy Light Wagon Co.	1		1		1			
Eisendrath, B. D., Tannery	1	3	101	9	110	3	2	550
Elite Laundry	1		3	5	8		1	30
Fair Mfg. Co., Hat pins		1	2	10	12	2		
Fence, B. B., Co., Fences	1		2		2			
Fiebrick-Fox-Hilker Shoe Co.		2	70	45	115	6	1	40
Fish Bros. Wagon Co.	4	6	188	10	198	5	3	150
Flegel Plating Works, Plating	1		4		4			
Foster & Williams Mfg. Co., Agri. implements	4		4	1	5			
Freeman, Geo. B., Bits	1		5	1	6			
Freeman & Sons Mfg. Co., Boilers	3	3	264	3	267	5	2	335
Gold Medal Camp Furniture Co., Camp furniture	3		35	15	50		1	80
Groton, Geo., Mch. Co., Engraving tools	1		16		16			
Graham, F. W., Mfg. Co., Patterns	1		7		7			
Green, P. J., Engines	1		14		14		1	45

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TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
RACINE—Continued.								
Gunther, F. W., Co., Sauerkraut.	4	.....	8	6	14	6	1	49
Harvey Spring Co., Wagon springs	2	.....	35	.....	35	1	.....	.....
Haumerson, F. H., & Sons, Brick.	2	.....	17	.....	17	1	.....	.....
Herrick, H. F., Co., Repairs	2	.....	5	.....	5	.....	1	25
Higgins Spring & Axle Co.	5	.....	84	1	85	5	1	300
Hilker Bros., Brick Mfg. Co.	2	.....	30	.....	30	.....	.....	.....
Hilker-Wiechers Mfg. Co., Overalls	1	.....	20	193	213	3	.....	.....
Holbrook-Armstrong Iron Co.	4	.....	125	.....	125	1	1	60
Horlicks' Food Co., Malted Milk...	6	.....	158	150	308	29	4	120
Imperial Bit & Snap Co.	.....	1	30	3	33	1	1	8
Jacobson, H. F., & Co., Patterns.	1	.....	2	.....	2	.....	.....	.....
Johnson, S. C., & Son, Floor wax.	3	.....	70	10	80	12	3	275
Johnson & Field Mfg. Co., Fanning mills	1	.....	18	2	20	.....	1	100
Jorgenson Bros., Laundry	1	.....	3	9	12	.....	.....	33
Junction Flouring Mill Co.	.....	1	.....	.....	.....	.....	1	8
Klinkert, E., Brewing Co.	1	.....	10	.....	10	.....	1	150
Kohlman, Peter J., & Co., Soda and mineral water.	.....	1	5	.....	5	.....	.....	.....
Kranze, W. H., Brooms.	1	.....	4	.....	4	.....	.....	.....
Ladies' Garment Mfg. Co.	1	.....	9	101	110	3	1	60
Lakeside Malleable Casting Co.	3	.....	233	.....	200	1	2	200
Lakeside Printing Co.	1	.....	5	.....	5	.....	.....	.....
Lang Mfg. Co., Metal stamping.	1	.....	16	.....	16	.....	.....	.....
Lock, Hook & Snap Co.	1	.....	2	1	3	.....	.....	.....
Marbohn Wagon Works	1	.....	5	.....	5	.....	.....	.....
Manufacturers Printing Co., Printing	1	.....	11	1	12	1	.....	.....
Miller, J., Shoe Co.	1	2	225	75	300	22	2	150
Milwaukee Electric Ry. & Light Co.	2	.....	67	.....	67	.....	6	1,600
Mitchel & Lewis Wagon Co.	10	6	429	6	435	11	3	750
Mitchell Motor Car Co., Automobiles	7	.....	250	.....	250	1	1	50
Model Steam Laundry	1	1	4	11	15	.....	1	20
Modern Skirt Co.	1	.....	4	71	75	.....	.....	.....
Monarch Shoe Co.	1	.....	6	1	7	.....	.....	.....
O'Laughlin, John, Stone Co.	.....	1	70	.....	70	.....	2	200
Paddock & Meyers, Marble works.	1	.....	3	.....	3	.....	.....	.....
Paulson, J., Buggy tops	1	.....	1	1	2	.....	.....	.....
Peterson, O. C., Plug tobacco factory	1	.....	2	.....	2	.....	.....	.....
Philbrook Shoe Co.	1	.....	4	2	6	.....	.....	.....
Pierce Engine Co., Engines and yachts	4	.....	85	4	89	.....	.....	.....
Piggins Bros., Machine shop	1	.....	8	.....	8	.....	.....	.....
Pugh, W. H., Coal	1	.....	28	.....	28	.....	1	100
Racine Boat & Canoe Co.	1	.....	10	.....	10	.....	.....	.....
Racine Brass & Iron Co.	2	.....	32	.....	32	.....	.....	.....
Racine Daily Journal	1	.....	26	9	35	3	.....	.....
Racine Daily News	1	.....	11	1	12	.....	.....	.....
Racine Daily Times	1	.....	25	5	30	.....	.....	.....
Racine Engine & Machine Co.	1	.....	34	5	39	.....	2	400
Racine Fuel Co., Coal	4	.....	7	.....	7	.....	1	40
Racine Garment Co., Skirts	1	.....	4	30	34	.....	.....	.....
Racine Gas Light Co.	3	.....	74	.....	74	.....	2	175
Racine General Mfg. Co., Bolsters.	1	.....	8	2	10	.....	.....	.....
Racine Hatchery Co., Incubators.	1	.....	18	3	21	.....	.....	.....
Racine Iron & Metal Co., Scrap iron	1	.....	12	.....	12	.....	.....	.....
Racine Iron & Wire Works	1	.....	6	.....	6	2	.....	.....
Racine Malleable Iron Co., Harness castings	6	.....	276	14	290	22	2	300

TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
RACINE—Continued.								
Racine Metal Stamping Co.	1		12		12	1		
Racine Novelty Mfg. Co., Wooden ware	3	3	174	1	175		1	80
Racine Novelty Co., Automobile bodies		3	120		120		2	120
Racine Paper Box Co., Paper boxes	1		4	10	14	2		
Racine Paper Goods Co., Cigar pockets		1	18	36	54			
Racine Pure Milk Co., Milk and cream	5		18		18		1	100
Racine Refrig. & Box Co., Ice boxes	1		63	4	67		2	200
Racine Sattley Co., Wagons and carriages	5	8	810	23	833	12	4	925
Racine Shoe Mfg. Co.	3	2	69	41	110	9	1	80
Racine Skirt Co.		1	10	50	60	5		
Racine Top, Dash & Cushion Co.	1		4	1	5			
Racine Trunk Co.		2	36	9	45	3	1	85
Racine Traveling Bag Co.		1	7	3	10			
Racine Water Co.	5		4		4		4	500
Racine Woolen Mill Co.	3	1	60	90	150		2	375
Reliance Iron & Engine Co.	2		31	1	32			
Roberts & Co., Cut Stone	1		7		7			
Secor, M. M., Trunk Co.		4	115	9	124	11	2	200
Shoop, Dr. Medical Co.		1	32	68	90	5	1	60
Sig, St., Novelty Works, Door springs	1		2		2			
Slarie, The, Publishing	1		4	1	5			
Tektonics, E. C., Mfg. Co., Tank lugs	1		10		10			
Tidyman, M., Candy		1	9	4	13	1		
T. M. B. R., & L. Co., Light and power	8		13		13		6	1,500
U. S. Standard Electric Works		1	12	2	14			
Waher, H. H. Mfg. Co., Potato planters	1		4		4			
Weber-Bahnemann Co., Planing mill	1	1	40		40		1	125
West Side Laundry	1		7	18	25		1	80
West Side Printing Co.	1		4		4			
White Star Laundry		1	4	10	14		1	40
Wigley, D. P., Feed mill	1		5		5			
Winship Mfg. Co., Tank lugs	2		1		1			
Wis. Agriculturist, Publishing	1		5	13	18	2		
Wis. Supply Mfg. Co., Machine shop	1		5		5		1	25
Wood, Lyman, Mfg. Co., Leather goods		2	2	1	3			
Total	259	95	8,200	1,769	9,969	269	124	15,554
RACINE JUNCTION, RACINE CO.								
Racine Boat Co.	1		3		6			
Total	1		6		6			
RADISSON, SAWYER CO.								
Radisson Hardwood Lumber Co.	5		90		90		2	100
Total	5		90		90		2	100

TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
RANDOLPH, DODGE CO.								
Jones, D. & G., Elevator	1		2		2			
Randolph Advance, Publishing	1		2	1	3	1		
Randolph Canning Co.	5		66	18	84	6	3	100
Randolph Electric Light Co.	1		1		1		1	100
Randolph Wagon Works	4	1	25		25		1	65
Ward & Andrews, Creamery	1						1	15
Wis. Malt & Grain Co., Elevator ..	1		1		1			
Total	14	1	97	19	116	7	6	250
READSTOWN, VERNON CO.								
Central Warehouse, Tobacco	1		11	50	61	1		
Kickapoo Lumber Co.	1		7		7			
Total	2		18	50	68	1		
REDGRANITE, WAUSHARA CO.								
Red Granite Herald, Publishers	1		1	2	3			
Wis. Granite Co., Crushed granite.	1		130		130		50	30
Total	2		131	2	133		5	30
REEDSBURG, SAUK CO.								
Appleton Woolen Mills	5	1	28	51	79		2	160
Reedsburg Bottling Works, Soda water	1		1		1			
Reedsburg Brewery	3	1	5		5		1	50
Reedsburg Canning Co.	3	1	42	58	100	4	2	80
Reedsburg Creamery	4		3		3		1	20
Reedsburg Electric Light & Water ..	2		3		3		2	240
Reedsburg Free Press, Publishing ..	1		4	2	6	1		
Reedsburg Marble Works	2		14		14			
Reedsburg Roller Mills	2	1	2		2		1	30
Reedsburg Steam Laundry		1	2	3	5		1	20
Reedsburg Times, Publishing	1		3	1	4			
Reedsburg Woolen Mills	5	1	40	46	86	6	2	160
Sanders, A. M., Machinist	1		4		4			
Scherve & Fuhrmann, Maltsters ..	4		4		4			
Townsend Bros., Mfg. interior finish ..	4		6		6			
West Side Building Co.	4		15		15			
Total	42	6	176	161	337	11	12	810
REEDSVILLE, MANITOWOC CO.								
Rehinawand, P., Grain elevator		1	2		2			
Total		1	2		2			

TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
RHINELANDER, ONEIDA CO.								
Brazell, Ed., & Sons, Saw mill	1		28		28		3	150
Brown Bros., Lumber	3	1	130		130		9	1,000
City Construction Co., St. paving..	1		50		50		1	50
City Electric Light Plant	1						3	300
City Water Works	1		5		5		2	150
Herald, Publishing	1		2	1	3			
Johnson, F. H., Lumber Co.	2		1		1		5	500
Kristianson, Mr., Bicycle shop	1		2		2			
New North (The), Publishing	1		5	2	7			
Queal, J. H., & Co., Lumber	6		40		40		1	150
Rhineland Boat Co.	1		10		10			
Rhineland Brewery Co.	3		6		6		1	25
Rhineland Iron Co.	1	4	15		15		1	25
Rhineland Lighting Co.	1		5		5		2	250
Rhineland Mfg. Co., Refrigerators	7		60		60		2	150
Rhineland Paper Co.	9	2	275		275		4	1,200
Rhineland Power Co.	2		9		9			
Rhineland Steam Laundry	1		3	5	8		1	25
Robbins Lumber Co.	8		170	2	172		8	560
"Soo" Ry. Co., Round house	2		14		14		1	50
Stevens Lumber Co., Saw mill	2		100		100	2	5	250
Vaughn, W. B., Concrete blocks....	1		2		2			
Vindicator, Publishing	1		3		3			
Wis. Vencer Co., Vencer factory....	5		100		100	1	3	240
Total	32	7	1,036	10	1,046	3	52	5,075
RIB LAKE, TAYLOR CO.								
City Electric Lighting Plant	1		2		2		2	70
Mathic, John, Saw mill	4		25		25		3	110
Rib Lake Lumber Co.	7		140		140		9	900
U. S. Leather Co.	8		80		80		8	400
Total	20		247		247		22	1,480
RICE LAKE, BARRON CO.								
Barron County Handle Co.	4		20		20		1	70
Boortz, F. S. & Co., Repair shop..	1		3		3			
Chronotype, Publishing	1		3	1	4			
Comley, A. M., General repairing..	1		5		5		1	70
Jones, McClench & Co., Machine shop and feed mill	1		5		5		1	10
Mercier, C. E., Saw mill	2		17		17		1	70
Peters, J. H., Machine shop	2		3	1	4		1	8
Peterson & Nelson, Woodworking..	3		10		10		1	25
Phoenix Brewing Co.	3		3		3		1	50
Red Cedar River Mfg. Co., Woodworking	2		2		2		1	25
Rice Lake Light & Water Works....	1		3		3		2	240
Rice Lake Creamery	1		2		2		1	25
Rice Lake Iron Works	1		3		3	1	1	8
Rice Lake Leader, Publishing	1		3	1	4			
Rice Lake Lumber Co.	12		233	3	236		8	880
Rice Lake Milling & Flour Co., Flour		2	4		4			
Rice Lake Mfg. Co., Woodworking..	3		10		10		1	50

TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
RICE LAKE—Continued.								
Sandahl, J. A., Wagons	1		3		3			
Shelrud, J., Woodworking	3		10		10		1	100
Times, Publishing		2	10		10			
Wis. Flour Co.	1		2		2			
Total	44	2	333	6	339	1	21	1,501
RICHLAND CENTER, RICHLAND CO.								
Bender & Jones, Steam Laundry ..	1		2	2	4		1	12
Burnham & Scott, Creamery			3		3		1	20
James, N. L., Saw and planing mill	3		25		25		1	60
Krouskoup, A. H., Saw and planing mill	3		20		20		2	160
Parfery, A. C., Excelsior	1		11		11			
Parfery, A. C., Grist mill		1	1		1			
Parfery, A. C., Butter tubs and boxes	1						1	100
Republican Observer, Publishing ..	1		3	1	4			
Richland Center Electric Light Plant	3		2		2		2	200
Richland Center Flour & Feed Mill	1	2	2		2			
Richland Center Water Works	1		1		1		2	120
Richland Center Democrat, Publishing	1		2	1	3			
Richland Rustic, Publishing	1		3	1	4			
Snow Bros., Mfg. tubs, boxes and barrels	2		7		7			
Total	19	3	82	5	87		10	672
RIPON, FOND DU LAC CO.								
Automatic Cream Separator	1		4		4			
Bouton & German Co., Gloves, mittens	2		20	30	50			
Commonwealth, The, Publishing....	1		3	1	4			
Haas, John, Brewery	3	3	6		6		1	30
Heath & Butzke, Carriages	3	1	25		25			
Ripon Knitting Works	1	1	45	125	170		1	100
Ripon Light & Water	2		2		2		4	285
Ripon Produce Co., Creamery	3		5		5		1	20
Ripon Packing Co., Pickles	1		6		6			
Ripon Roller Mills	2	1	3		3		1	80
Ripon Steam Laundry	1		1	4	5		1	20
Schaefer, W. E., Foundry	1		3		3			
Wimm, J. E., Fruit boxing	1		8		8		1	60
Total	22	6	131	160	291		10	795
RIVER FALLS, PIERCE CO.								
Elliot & Wasson, Farm products...	1	1	3		3			
Fortune, Geo., & Co., Feed and grain		1	2		2			
Hemmingway, J. S., Air pumps and gravity machines	1		1		1			
Jensen, J. O., Sheet metal works...	1		3		3			
Journal, The, Publishing	1		3	1	4			

TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
RIVER FALLS—Continued.								
Lund, A. W., Carriage factory	1		14		14			
Prairie Mill & Elevator		2	6		6			
Pulnam, W. H., Flour and feed manufacturing	1		3		3			
Pulnam Bee Hive Factory	1		4		4			
River Dale Light & Power Co.	1		3		3			
River Falls Light & Power Co.	2		4		4			
River Falls Starch Co.	1		13		13		1	60
River Falls Times, Publishing	1		3		3			
Smith, Geo. D., Wagon Mfg.	1		1		1		1	13
Tubbs Mfg. Co., Patent medicine ..	1		3	3	6			
Wilson Bros., Grain elevator			7		7			
Wilson A. H., Flour Mill	1		4		4			
Wis. Elevator Co.	1	1	2		2			
Total	17	5	79	4	83		2	70
RIVERSIDE, SHEBOYGAN CO.								
(See Sheboygan.)								
ROBERTS, ST. CROIX CO.								
Roberts Creamery	1		3		3		1	15
Total	1		3		3		1	15
RUBICON, DODGE CO.								
Rubicon Cheese Factory	1		1		1		1	6
Rubicon Malt & Grain Co.		2	12		12		2	160
Total	1	2	13		13		3	166
RUSK, DUNN CO.								
Christensen, N. K., Feed mill	1		1		1		1	30
Farmers' Dairy Association	2		2		3		1	30
Wis. Elevator Co.	2		2		2			
Total	5		6		6		2	30
ST. CROIX FALLS, POLK CO.								
Columbia Imp't Co., Power plant builders		1	300	3	303		2	60
Phee, Thos., Construction Co., Power plant		1	200		200		3	190
St. Croix Falls Roller Mill		1	3		3			
Total		3	503	3	506		5	250
ST. NAZIANZ, MANITOWOC CO.								
Pioneer Canning & Pickling Co. ...	6	1	31	12	43		1	60
St. Nazianz Roller Mill	2		3		3		1	90
Total	8	1	34	12	46		2	150

TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
SARONA, WASHBURN CO.								
Hill, Wm., Saw mill	1		12		12		1	60
Total	1		12		12		1	60
SAUK CITY, SAUK CO.								
Dresen Bros., Contractors	1		7		7		1	15
Hussel & Meyer, Buggies, wagons, sleds	3		6		6		1	50
Maegerlein & Son, Elevator	4		2		2			
Sauk City Brewery	3	1	5		5			
Sauk City Canning & Packing Co.	4		50	30	80		2	50
Sauk City Pioneer Press, Publishing	1		1	1	2			
Village Electric Light Plant	1		1		1		2	225
Weekly Home News, Publishing	1			2	2			
Wis. Creamery Co.	1		2		2			
Total	19	1	76	33	109		6	360
SAWYER, DOOR CO.								
Elenbecker Bros., Planing mill	5		7		7		1	25
Elenbecker Bros., Woodshop	1		7		7		1	35
Jenning Packing Co., Canning peas.	3		155	35	200	19	3	300
Lyon Bros., Elevator	2	1	3		3			
Shaw Co., Thos., Feed	3	1	3		3		1	80
Teweles and Brandeis, Elevator		1	2		2			
Total	20	3	187	35	222	19	6	440
SAXON, IRON CO.								
C. & N. W. Ry. Co.	1		1		1		1	20
Henry DeFer, Saw mill	2		50		50		3	300
Saxon Creamery Co.	1		1		1		1	25
Total	4		52		52		5	345
SCANDINAVIA, WAUPACA CO.								
Silver Lake Creamery		1	2	1	3		1	15
Silver Lake Roller Mills		1	1		1			
Shoppers Pilot, Publishing		1	1	1	2			
Wanbow, O. N., Wagon shop		1	1		1			
Total		4	5	2	7		1	15
SCHLEISINGERVILLE, WASHINGTON CO.								
Botschafter, Der, Publishers	1		2	1	3			
Klettl, F., Wagons	1		3		3			
Klettl, Jno., Saw mill	1		3		3		1	40
Maxen, Dan, Creamery	1		1		1			
Rosche, John, Foundry	1		2		2			
Rosenheimer, L., Elevator	1		1		1		1	30
Stock Brewing Co.	2		8		8		1	60
Thill, John & Son, Wagons	1		3		3			
Wis. Pipe Organ Factory	1		4		4			
Total	10		27	1	28		3	130

TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
SCHOFIELD, MARATHON CO.								
Brooks & Ross Lumber Co.	7		250		250	4	5	585
Total	7		250		250	4	5	585
SEYMOUR, OUTAGAMIE CO.								
Brickhart, John, Flour and feed...	1	1	2		2		1	65
Dean Mfg. Co., Repair shop	2		14		14		1	40
Lotter Bros. Mfg. Co., Blacksmith and machine shop	1		2		2			
Newell, S. D., Electric Power Co..	2		1		1		1	100
Seymour Press, Publishing	1		3		3			
Seymour Woodenware	6		9	3	12		1	80
Ziegenbein, Frank, Lumber	3		4		4		1	20
Total	17	1	35	3	38		5	395
SHAWANO, SHAWANO CO.								
Advocate, Publishing	1		1	2	3			
Fox River Soap Co., Soap			7	1	8			
Model Roller Mills	3	1	3		3		1	59
Raddant Brewing Co.	6	1					1	190
Shawano City Mills		1						
Shawano County Journal	1		3	2	5			
Shawano Steam Laundry	1		1	1	2		1	10
Shawano Light & Water Co.	4		3		3		3	225
Volksbote-Wochenblatt, Publishing	1		3	1	4			
Wolf River Paper & Fiber Co.	15	2	135	5	150		8	1,200
Total	32	5	166	12	178		14	1,605
SHEBOYGAN, SHEBOYGAN CO.								
Aladdin Soap Co.	4		4	3	7		1	50
Am. Hide & Leather Co., Tannery.	8	1	300		300		5	550
Am. Folding Bed Co.	4	2	50		50		1	150
Am. Mfg. Co.	5	2	204	21	225		2	275
Am. Parlor Frame Co.	2	1	49	1	50		2	160
Amerika Publishing Co.	1		16	6	22			
Art Furniture Co.	3	1	41		41		1	159
Badger State Tanning Co.	8	2	217	3	220		5	470
Balzer, John, Carriages and wagons	4		15	1	16		1	50
Biedelfeldt, Chas., Brooms	1		6	1	7			
City Water Co.	4		10		10		4	450
Columbia Shoe Co.	1		25	7	32			
Crocker Chair Co., A.	10	4	375	50	425		3	500
Crocker Chair Co., B.	5	5	425	50	475		4	700
DeLand, A. D., Mfg. Co., Brew- ery supplies	2		10		10		1	50
Dillingham Mfg. Co.	13	2	200		200		3	285
Ebenreiter & Hildebrand, Lumber..	2		7		7			
Excelsior Steam Laundry	3		3	7	10		1	35
Excelsior Wrapper Co.	5		75	5	80	7	3	300
Freyberg Lumber Co.	5		24		24			
Frost Veneer Seating Co.	6	2	272	3	275	14	3	350

FACTORY INSPECTION.

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TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
SHEBOYGAN—Continued.								
Garton Toy Co.....	8	3	260	15	275	22	2	160
Globe Foundry & Machine Co.....	7		25		25			
George, Grant, Counter Co.....	2		10		10			
Gutsch Brewing Co.....	8	3	60		60		2	125
Herald Publishing Co.....	1		10	14	24			
Jenkins Machine Co.....	6		45		45		1	60
Jung Carriage Co.....	4	1	13		13	1		
Kahlberg, E. P., Laundry.....	3		3	11	14		2	60
King, Arthur, Pianos.....		1	90	1	91			
Kohler, J. M., Sons Co., Plumbers' supplies.....	16		265		265		2	160
Landreth, A., Canning Co.....	5		150	40	190		1	160
Meyer Machine Co.....	2		7		7		1	30
Miller, S. H., Piano Co.....	2		30		30		1	40
Mueller Lumber Mfg. Co.....	3	1	50	1	51		1	80
National Demokrat, Publishing.....	1		15		15			
Northern Furniture Co.....	5	4	627	3	630		13	1,100
Offenburg & Sonnemann, Boiler makers.....	4	2	25	1	26		1	25
Phoenix Chair Co.....	1	8	505	45	550	40	3	600
Port Huron Salt Co.....	3		20		20			
Preussler, R., & Sons, Book cases.....		2	40		40			
Reis, C., Coal Co.....	9	2	134	6	140		5	550
Sellinger-Ross Co., Mfg. gloves.....	2	1	100	250	350	31	2	135
Schreier, Konrad Co., Brewers.....	11	2	50		50		3	375
Sheboygan Brick & Tile Co.....	4		27		27		1	60
Sheboygan Chair Co.....	7	6	455	20	475	29	2	300
Sheboygan Cigar Mold Co.....	6		42		42	7	1	80
Sheboygan Cigar Box Factory.....	1		2	3	5			
Sheboygan Coal Co.....	3		22		22		1	60
Sheboygan Couch Factory.....	1		33	2	35			
Sheboygan Daily Journal, Publishing.....	1		9	6	15			
Sheboygan Fruit Box Co.....	3		10	5	15	4	1	25
Sheboygan Gas Co.....	9		20		20		1	75
Sheboygan Knitting Co.....	6		31	111	142	32	2	200
Sheboygan Light, Power & Railway Co.....	8		60	1	70		3	950
Sheboygan Mineral Water Co.....	4		16	8	24	4	1	40
Sheboygan Novelty Co., Writing desks.....	1	2	65	1	66	2		
Sheboygan Packing Pad Co.....	2		10		10			
Sheboygan Parlor Furniture.....	3	3	87	3	90		3	250
Sheboygan Water Co.....	4		10		10		4	450
Sheboygan Wood Working Co.....	1		6		6			
Sheboygan Volksblatt, Publishing.....	1		3	2	5			
Smith & Nedberg Mfg. Co., Brewery supplies.....	5		23	2	25			
Sheboygan Telegram, Publishing.....	2		8		8			
Sprat, Geo., & Co., Chairs.....	6		113	7	120		1	150
Twig, Otto, Shoes.....	1		17	5	22	1		
Udell, C. E., Cheese bands.....	1		2	9	11	2		
Vollrath, J. J., Mfg. Co., Tinware.....	11	1	325	125	450	46	2	226
Wall & Ross, Mfg. gloves.....		1	100	150	250	37		
Winter, M., Lumber Co., Office fixtures.....	8	1	107	3	110		2	160
Zimball, Oscar, Mfg. brick.....	5		25	1	26		1	75
Zimmermann, Edward, Book bindery.....	2		4	2	6			
Zurheide, F., & Son, Brick yard.....	5		14		14		1	30
Total	313	66	6,497	1,011	7,508	279	107	11,346

TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
SHEBOYGAN FALLS, SHEBOYGAN CO.								
Ambruster, O., Machine shop.....	3		12		12	1	1	4)
Brickner Woolen Mills.....	4	2	29		29		2	135
Falls Machine Co.....	8		28	1	29			
Lumsden Bandage Mfg. Co., Cheese bandages	1		2	7	9			
Richardson Bros., Cheese boxes and chairs	6		50		50		1	119
Sheboygan County News, Publishing	1		4		4			
Sheboygan Roller Mills.....	1	1	4		4			
Thomas, R. H., & Son, Flour mill.	1	1	4		4			
Weis, Chas., & Co., Tannery.....	6	1	57		57		2	235
White Wagon Works.....	4	1	42		42		1	100
Total	35	6	233	8	291	1	7	609
SHELL LAKE, WASHBURN CO.								
Lake Side Lumber Co.....	4		20		20		1	65
Shell Lake Boat Co.....	7		60	1	61		1	155
Shell Lake Electric Light & Water Co.	1		2		2		2	160
Shell Lake Milling Co.....	1	1	3		3		1	70
Washburn Co. Register.....	1		2	1	3			
Total	14	1	87	2	89		5	380
SHIOCTON, OUTAGAMIE CO.								
Shiocton Custom Mill, Grist mill...		1	1		1		1	50
Shiocton News, Publishing.....	1		1	1	2			
Total	1	1	2	1	3		1	50
SHULLSBURG, LAFAYETTE CO.								
Brown Croff Mining Co.....	1		20		20		2	170
Hillary & Co., Feed mill.....	1		2		2			
Imperial Zinc & Lead Mining Co...	1		6		6		1	80
Little Mike Brewery		1	5		5		1	30
Luke, W. H., Cheese	1		2		2		1	15
Municipal Water Works.....	1		1		1		1	50
Pick & Gad, Publishing.....	1		1	2	3			
Total	6	1	37	2	39		6	345
SIGNOR, SAWYER CO.								
Signor Saw Mill	1		22		22		1	80
Total	1		22		22		1	80

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TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.			Boilers.		
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
SOLDIERS GROVE, CRAWFORD CO.								
Journal, The, Publishing.....	1		2		2			
Keogh Excelsior Mill.....	5		16		16		1	100
Peterson, Atley, Saw mill.....	1		7		7		1	100
Soldiers Grove Creamery.....	1		1		1		1	20
Soldiers Grove Electric Light Co....	1		1		1		1	100
Soldiers Grove Milling Co.....	1		2		2			
Total	10		29		29		4	320
SOMERSET, ST. CROIX CO.								
Somerset Power Plant.....	1		4		4			
Total	1		4		4			
SOUTH MILWAUKEE, MILWAUKEE CO.								
Bucyrus Company, Steam dredges..	25	1	1,004		1,004		3	900
Columbia Mineral Wool Co.	3		16		16		2	160
Conant, J. F., Mfg. Co., Baskets...	7	1	95	1	96	3	2	110
Eagle Horse Shoe Co.....	2		360		360	8	3	1,300
Koerner, A. E., Printing.....	1		1		1			
Nirschl, Frank, Contractor.....	1		5		5			
South Milwaukee Journal, Publish- ing	1		2	1	3			
South Milwaukee Steam Laundry...	1		2	2	4		1	12
South Milwaukee Water Works....	1		2		2		2	150
Webster Mfg. Co., Pattern shop...	1		3		3			
Racine Fire Engine Motor Co.....	3		21	1	22			
Stowell Mfg. & Foundry Co.....	17		398	3	401	13	4	400
Yunk, John C., Tannery.....	2		6		6		1	70
Total	65	2	1,915	8	1,923	20	18	3,102
SPARTA, MONROE CO.								
American Cigar Co.....	4		100	300	400		1	20
Bergman Bros., Grist mill.....	1		1		1		1	20
C. & H. Laundry.....	2		3	4	7			
Eckhard, Fred, Elevator.....	3		2		2			
McCoy, B. E., Flour and feed.....	1		1		1			
McEachron, H. E., & Co., Elevator	2		2		2			
Monroe Co. Democrat, Publishing.	1		3	1	4			
Newton, J. O., Sons & Co., Light and power	2		1		1			
Shattuck Bros., Feed and saw mill	2		4		4		1	15
Sparta Advertiser, Publishing.....	1		2	1	3			
Sparta Co-operative Creamery Co...	1		3		3		1	25
Sparta Herald, Publishing.....	1		3	1	4			
Sparta Iron Works.....	9		11		11		1	20
Sparta Sash & Door Co.....	2		5		5		1	20
Sparta Water Works	2		1		1		2	100
Total	34		142	307	449		8	220

TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
SPLITROCK, SHAWANO CO.								
Saw & Grinding Mill.....	2	.....	12	.....	12	.....	1	50
Total	2	.....	12	.....	12	.....	1	50
SPOONER, WASHBURN CO.								
Brand, Edward, Flour mill.....	.....	1	3	.....	3	.....	.....	.....
Johnson, A. C., Planing mill.....	1	.....	6	.....	6	.....	1	50
Spooner Advocate, Publishing.....	1	.....	2	1	3	.....	.....	.....
Spooner Electric Light Co.....	1	.....	2	.....	2	.....	.....	.....
Spooner Lumber Co.....	4	.....	12	.....	12	.....	1	40
Spooner Roller Mills.....	.....	1	3	.....	3	.....	.....	.....
Total	7	2	28	1	29	.....	2	90
SPRINGVALLEY, PIERCE CO.								
Brown Bros., Saw mill.....	1	.....	20	.....	20	.....	1	80
Kohut, J. P., Wagons.....	1	.....	6	.....	6	.....	.....	.....
New Richmond Roller Mill Co.....	2	.....	3	.....	3	.....	.....	.....
Springvalley Brick Yard.....	4	.....	25	.....	25	.....	1	60
Springvalley Tile Co.....	17	.....	15	.....	15	2	1	60
Springvalley Creamery.....	1	.....	2	.....	2	.....	1	25
Springvalley Iron Works.....	3	.....	7	.....	7	.....	1	50
Springvalley Ore Smelter.....	17	.....	80	.....	80	.....	7	1,350
Springvalley Stave & Heading Mill.....	5	.....	59	.....	59	.....	5	300
Springvalley Sun, Publishing.....	1	.....	3	2	5	.....	.....	.....
Tauberg & Sieberne Co., Elevator..	3	.....	5	.....	5	.....	.....	.....
Total	55	.....	248	2	248	.....	17	1,905
STANLEY, CHIPPEWA CO.								
Giazgue, C. M. Saw mill.....	1	.....	20	.....	20	.....	1	50
Northwestern Lumber Co.....	22	.....	625	.....	625	20	7	1,350
Stanley Creamery Co.....	1	.....	3	.....	3	.....	1	25
Stanley Republican, Publishing.....	1	.....	2	1	3	.....	.....	.....
Stanley Times, Publishing.....	1	.....	2	1	3	.....	.....	.....
Stanley Water Works.....	1	.....	1	.....	1	.....	.....	.....
Stanley Wooden Ware Co.....	1	.....	16	.....	16	2	1	60
U. S. Leather Co.....	9	.....	100	.....	100	.....	5	515
Total	37	.....	779	2	781	22	15	575
STETSONVILLE, TAYLOR CO.								
Ellington Lumber Co.....	1	.....	30	.....	30	.....	2	150
La Berge, Albert, Planing mill.....	1	.....	19	.....	19	.....	1	75
Stetsonville Creamery Co.....	1	.....	2	.....	2	.....	1	20
Total	3	.....	42	.....	42	.....	4	245

TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business	Buildings.		Employees.			Boilers.		
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	Total h. p.	
STEVENS POINT, PORTAGE CO.								
Automatic Cradle Mfg. Co.....	2	1	11		11			
Central City Iron Works	6		6		6			
Clifford & Fox Lumber Co.....	8		61		61		5	
Coye Furniture Co.....	8	1	157		157	17	2	
Frost, J. C., Miss, Trout and bass flies	1		3	94	97	23		
Gazette, The, Publishing.....	1		5	2	7			
Jackson Milling Co., Flour.....	4	2	15		15			
Jerns Bros., Mfg. tables, etc.....	4	1	33		33	2	2	
Koshollek, P. F., Gasoline engines.	2		1		1			
Mitchell, W. W., Grist and saw mill	2	1	39		39		2	
Pfiffner, E. J. Co., Planing mill...	12		20		20		1	
Plover Paper Co.....	5	2	147	73	220		4	
Racine Underwear Co.....	2		2	23	25			
Rice, John, Foundry.....	4		24		24			
Rolnik, The, Publishing.....	1		8	3	11			
Stevens Point Bottling Works, Soda water	1		2		2			
Stevens Point Box Co., Boxes.....	7		25		25		1	
Stevens Point Brewing Co.....	7	1	17		17		2	
Stevens Point Gas Co.....	2		3		3			
Stevens Point Lighting Co.....	5		6		6		3	
Stevens Point Journal, Publishing.	1		6	2	8	1		
Stevens Point Tannery Co.....	1		3		3			
Stevens Point Water Co.....	1		2		2		2	
Vetter Mfg. Co., Sashes, doors, mouldings	10		28		28		1	
Weeks, John, Lumber Co.....	11		108		108		4	
Western Wall Paper Mill.....	3		40	12	52	8	1	
Wisconsin Best Steam Laundry	2		4	28	32		1	
Wisconsin Paper & Pulp Co.....	9		167	12	179		4	
Total	122	9	943	249	1,192	51	35	2,399
STODDARD, VERNON CO.								
Hanesworth, J. H., Planing mill...	1		1		1		1	
Stoddard Roller Mills.....	1		2		2			
Stoddard Times, Publishing.....	1		1		1			
Stokke, J. O., Planing mill.....	1		1		1		1	
Total	4		5		5		2	57
STOUGHTON, DANE CO.								
American Cigar Co.....		1	106	136	242	3		
American Leaf Tobacco.....	1		85	100	185	9	1	
Amundson, Peter, Machine shop....	1		2		2			
City Water Works.....	1		2		2		2	
Cohn, J., & Co., Leaf tobacco.....	1		55	20	75			
Davis, J. H., Milk.....	1		2		2		1	
Dearborn, C. L., Flour mill.....	2	1	7		7			
Gunderson, Osmund, Leaf tobacco..	1	1	5	12	17	2		
Hintz, C. M., Tobacco warehouse..	1		20	25	45			
Holton & Co., Tobacco warehouse..	1		25		25			
Lee, O. C., Tobacco warehouse.....	1		25	15	40			
Lee, Simon, Marble Works.....	1		2		2			

TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. P.
STOUGHTON—Continued.								
Mandt Wagon Co.....	23	4	359	3	402	2	3	330
Midgard, A., Publishing.....	1		2		2			
Municipal Water, Light & Electric Station	1		2		2		3	290
Peterson, L. A., Wagons, carriages	1		4		4			
Roe, O. K., Tobacco warehouse...	1		15	35	50			
Rosenroald Bros. & Roe, Leaf tobacco	1		20	40	60	2	1	5
Serstand, Andrew, Milk establishment	1		3		3			
Simonson & Grindahle, Leaf tobacco	1		25		25			
Stoughton Courier, The, Publishing	1		3		3			
Stoughton Hub, Publishing.....	1		3	2	5			
Stoughton Mill Co.....	1		5		5			
Stoughton Shoe Co., Mfg. men's shoes	1		16	5	21			
Stoughton Steam Laundry.....	1		2	2	4		1	13
Stoughton Wagon Co.....	22	1	183	2	185		2	225
Vijum, L., Contractor.....	1		1		1			
Vinjem, L. N., Door sash.....	1		5		5			
Total	71	10	1,024	397	1,421	18	14	1,122
STURGEON BAY, DOOR CO.								
Advocate, Publishing	1		6	2	8			
Door Co. Democrat, Publishing....	1		8	4	12			
Hunsader Machine Co.....	3		4		4			
Ives Bros., Machine shop and foundry	2		2		2			
Pankratz, Geo., Saw and shingle mill	7		60		60		5	220
Reynolds Preserving Co., Boxes....	3		6		6		1	20
Reynolds Preserving Co., Canning peas	11		350	50	400	30	3	250
Rieboldt & Wolters, Ship builders.	5		50		50		1	120
Sturgeon Bay Boat Co.....	3		22		22		1	20
Sturgeon Bay Brewery.....	5		9		9		1	5
Sturgeon Bay Electric Light Plant..	2		5	1	6		1	330
Sturgeon Bay Steam Laundry.....	1		1	2	3		1	15
Tutis & Brandise, Elevator.....		1	2		2			
Washburn Lumber Co.....	4		15		15		1	50
Total	51	1	540	59	599	30	15	1,080
SUN PRAIRIE, DANE CO.								
Colleney & Co., Tobacco warehouse	1		19	60	79			
Rendahl, J. K., & Co.....	1		30	55	85			
Total	2		49	115	164			
SUPERIOR, DOUGLAS CO.								
Allouez Bay Dock Co., Ore dock...	3		200		200	1	2	200
Amenia Sharm Land Co., Elevator..	2		8		8			
American Bedding Co.....	5		20	6	26		1	50
American Heating Co., Shop.....	1		17		17		10	910
American Ship Building Co.....			14		14			
Armstead Laundry	1		7	20	27		1	60

TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
SUPERIOR—Continued.								
Belt Line Elevator Co.....	2		35		35		3	325
Bing Lam Woodenware Co.....	1		5		5			
Buffalo Oil Co.....	1		8		8			
Builders Concrete Cast Stone Co....	1		10		10			
Cargill Elevator Co.....	2		35		35		3	375
Carlson Bros., Roofing.....	1		7		7			
Caleson, E., Shingle mill.....	1		12		12	1	1	60
Cowdin, H. F., Sash and doors....	3		25		25		2	120
Cowdin, H. F., Woodworking.....	3		40		40		2	100
Daisy Mill, Flour mill.....	2		75		75		5	1,250
Downs, D., Patterns.....	1		7		7			
Duffy, J. A., Carriages, wagons....	1		5		5			
Duluth, Superior Traction Co.....	1		5		5		3	450
Dunn Co. Iron Works.....	2		6		6		1	155
Duplex Mfg. Co., Windmill factory	12		125		125		3	230
Evening Telegram, Publishing.....	1		31	2	33			
Fitzpatrick & Erickson, Woodwork- ing.....	1		4		4			
Frankman Bros., Pile drivers.....	1		75		75			
Geyser Bottling Works.....	1		4		4			
Great Lakes Dredging & Contracting Co.....	5		30		20		2	80
Great Northern Bottling Works.....	1		3		3			
Great Northern Ry., Coal docks....	6		70		70		3	175
Great Northern Ry., Elevators.....	9		69		69		5	1,150
Great Northern R. R. Co., Railroad shops.....	11		416	4	420		3	260
Great Northern R. R. Co., Dock house and shops.....	2		25		25			
Globe Elevator Co.....	7		50		50		6	350
Hall Elevator Co.....		1	5		5		2	150
Hanna, M. A., Coal Dock Co.....	5		100		100		3	755
Holmes Bros., Roofing, etc.....	1		15		15			
Hotel Superior, Power house.....	1		4		4		3	240
Joos & Osmundson, Woodworking..	1		20		20			
Klinkert Brewing Co.....	1		6	1	7		2	160
Lehigh Valley Coal Co.....	12		60		60		2	150
Lund, Anthony, Bicycles.....	1		2		2			
Listman Mill, Flour mill.....	2	2	60		60		4	600
Mast, R. C., Book bindery.....	1		7	1	8			
Murray & McCann Lbr. Co.....	3		20		20		1	40
Natl. Boiler Works Co.....	1		75		75		5	250
N. W. Boiler Works.....	1		30		30			
Northern Brewing Co.....	2	3	17		17		2	160
Northern Coal Dock Co.....	5		60		60		2	400
Northern Coal Railway Co.....	8		80		80		6	400
Northern Fuel Co.....	16		210		210		4	400
Northern Fuel Co.....	4		75		75		3	260
Northern Fuel Co.....	3		35		35		1	150
Northern Fuel Co.....	5		120		120		6	900
Northern Machine Works.....	1		7		7		1	25
Pellister, C. D., Woodworking.....	1		5		5			
Penn. Wm., Stone Co.....	9		90		90		2	205
Philadelphia & Reading Coal Co....	4		60		60		4	500
Pittsburg Coal Co.....	5		75		75		4	300
Pittsburg Coal Co.....	6		60		60		6	345
Pittsburg Coal Co.....	2		30		30		4	600
Republic Elevator Co.....	2	2	15		15		2	400
Rogers & Ruger, Planing mill.....	2		25		25		1	60
Rogers & Ruger Lumber Co.....	4		40		40		1	125
Ross, J. S., Co., Elevator.....	1	1	6		6			

TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
SUPERIOR—Continued.								
Roberts, G. W., Roofing, etc.....	1		4		4			
St. Paul & Western Coal Co.....	4		150		150		3	150
Shunn, W. H., Contractor.....	1		10		10			
Standard Oil Co.....	5		10		10		1	40
Superior Bedding Co.....	5		15	6	21		1	65
Superior Boiler Works.....	1		6		6			
Superior Broom Works.....	1		2		2			
Superior Co-operative Barrel Co.....	1		12		12			
Superior Crushed Rock Co.....	2		50		50		2	100
Superior Fifth Wheel & Forge Co..	1		15		15			
Superior Iron Works.....	1		25		25			
Superior Mfg. Co., Building material, etc.	9		55	5	60	1	2	75
Superior Tidende, Publishing.....	1		3		3			
Superior Light, Water & Power Co.	2		10		10		4	716
Superior Light, Water & Power Co.	6		11		11		5	500
Silver, Tonsberg & Co., Printing....	1		6	2	8			
Strothman Iron Co., Iron works....	2		20		20		1	155
U. S. Gypsum Co.....	7		12		12		1	15
U. S. Pipe Co., Pipe foundry.....	8		60		60		1	150
Webster Mfg. Co., Chairs.....	10	4	286	28	314	5	4	425
Wilcox, D. B., Woodworking.....	1		5		5			
Wright's Foundry & Machine Works	2		30		30		1	15
Total	275	18	3,662	75	3,737	38	155	16,941
SURING, OCONTO CO.								
Cargill Grain Co., Elevator.....		1	2		2			
Total		1	2		2			
THERESA, DODGE CO.								
Riverside Cheese Factory.....	1		1		1		1	6
Theresa Milling Co.....		1	3		3		1	69
Union Brewery.....	1		3		3		1	12
Weber, Jeb, Brewery.....	1		3		3		1	30
Total	3	1	10		10		4	108
THORP, CLARK CO.								
Boardman, E. A., Saw mill.....	1		10		10		1	80
City Light & Water Plant.....	1		2		2		2	85
Colby Bros., Lumber and flour.....	1		12		12		1	50
Hansen, N. B., Farm implements....	1		5		5			
Nelson & Brummer, Wagons.....	1		2		2			
Nye, Lusk & Hudson, Saw mill....	1		25		25		2	80
Thorp Courier, Publishing.....	1		1		1			
Thorp Mfg. Co., Stave and heading mill	4		25		25		2	150
Vance, J. A., Grain elevator.....	1		3		3		8	445
Total	12		85		85		16	890

TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs of age.	No.	Total h. p.
TIGERTON, SHAWANO CO.								
Diels, C. J., Grain elevator	1		2		2			
Tigerton Chronicle, Publishing	1		2		2	1		
Tigerton Lumber Co., Saw mill.....	1		60		60		2	100
Total	3		64		64	1	2	100
TOMAH, MONROE CO.								
C. M. & St. P. Ry., Carpenter shops	7		86		86		2	175
Clark, W. H., Feed mill	2		2		2		1	20
Crossett Mfg. Co., Contractors	5		21		21		1	30
Farmers' Co-op, Butter Association	4		2		2		1	30
Goodyear, C. A., Saw and planing mill	17	1	142		142		5	510
Hill & Reynolds Mfg. Co., Contractors	4		12		12	1	1	20
Schultz, W. H., Flour and feed mill	3		4		4		1	45
Tomah Iron Works	2		5		5			
Tomah Journal, Publishing	1		2	1	3			
Tomah Monitor, Publishing	1		4		4		1	8
Tomah Steam Laundry	1		2	2	4		1	20
Tomah Water Works	1		2		2		1	175
Total	48	1	284	3	287	1	15	1,033
TOMAHAWK, LINCOLN CO.								
Oelhafen, John, Saw and planing mill	9		30		30		4	450
Tomahawk, The, Publishing	1		2	2	4			
Tomahawk Iron Works	6		20		20		1	50
Tomahawk Leader, Publishing	1		2	2	4			
Tomahawk Lumber Co.	6		130		130		4	700
Tomahawk Pulp & Paper Co.	24		74		74	2	5	720
Tomahawk Stave & Veneer Co.	3		35		35	4	2	150
Tomahawk Woodenware Co.	5		40		40	6	2	160
U. S. Leather Co., Tanning	10		101		101	3	3	450
Total	65		494	4	498	15	21	2,680
TURTLE LAKE, BARRON CO.								
Northern Grain Co., Elevator	1		4		4			
Turtle Lake Creamery Co.	1		2		2		1	20
Total	2		6		6		1	20
TWO RIVERS, MANITOWOC CO.								
Aluminum Mfg. Co., Al. novelties..	7		95	45	140	15	1	100
Becker Mfg. Co., Iron Foundry.....	3		7		7		1	15
Chronicle, The, Publishing	1		4	1	5			
Eggers, F., Veneer Seating Co.	9	2	165		165	16	2	195
Hamilton Mfg. Co., Printers' supplies	15	5	487	88	525	26	6	725
Kahlenburg Bros., Gasoline engines	3		25		25			

TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
TWO RIVERS—Continued.								
Kowella W., Boats	2		3		3		1	30
Mueller Brewing Co.	3		7		7	1	1	30
Nelson Lumber Co., Planing mill...	3			2	4	1		
Reporter, The, Publishing	1	1	4		4		1	80
Schroeder Bros., Grist mill	4		4	21	25	10	1	80
Two Rivers Knitting Co.	2		2	3	5		1	15
Two Rivers Steam Laundry	2		3		3		2	350
Two Rivers Waterworks	2		315	10	25	37	8	800
Two Rivers Woodenware Co.	21	2	138	72	210	27	2	160
Vandernil, E. J., Canning Co.	10		2	22	24	8	1	30
Zulu Knitting Co.	2	1	2					
Total	94	11	1,270	214	1,484	141	28	2,610
UNIONGROVE, RACINE CO.								
Biehn, F. J., Creamery	1		3		3		1	30
Blakey, J. G., Feed and Four Mill	1		9		9		1	30
Minton, F. M., Blacksmith shop...	1		1		1			
Total	3		13		13		2	110
UNITY, MARATHON CO.								
Fritz & Fry, Veneer and cheese box factory	5		42		42	2	3	135
Total	5		42		42	2	3	135
VIOLA, RICHLAND CO.								
Curry, R. C., Flour and Feed	1		2		2			
Cushman, E. R., Flour and Feed...	2		2		2			
Intelligencer, Publishing	1		1	1	2			
Selle Excelsior Co.	3		15		15	1	1	70
United Cigar Mfg. Co.	1		50	38	68			
Total	8		50	39	89	1	1	70
VIROQUA, VERNON CO.								
Bekkedahl, M. H., Leaf tobacco ...	1		10	45	55			
Cargill Co., W. W., Elevator		1	1		1			
Eckhardt, Fred, Leaf tobacco	1		30	40	60			
Helgerson, Ole, Leaf tobacco	1		2	32	40			
Riley, John, Planing mill	1		2		2			
Vernon Co. Censor, Publishing	1		3	1	4			
Vernon Co. Leader, Publishing	1		1	2	3			
Viroqua Elec. Light Co.	1		3		3		2	160
Viroqua Republican, Publishing	1		3	1	4			
Total	8	1	51	121	172		2	160

TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
WABENO, FOREST CO.								
Jones, G. W., Lumber Co.	3		75		75		3	200
Menominee & Bay Shore Lumber Co.	10	1	160		160		6	750
Wabeno Lumber Co.	1		25		25		1	100
Total	14	1	260		260		10	1,050
WALWORTH, WALWORTH CO.								
Chicago, Harvard & G. Lake Ry. Co.	1		16		16		4	500
Concrete Product Co., Concrete blocks	2		2		2			
Merriam, W. B., Feed Mill	1		3		3			
Milwaukee Elevator Co.	1		2		2			
Vaughn & Bushnell Mfg. Co., Hand hammers	3		20	1	21			
Walworth Condensed Milk Co.	1		6		6		2	170
Total	9		49	1	50		6	970
WASHBURN, BAYFIELD CO.								
Akely & Sprague, Planing mill	3		25		25		1	100
C. St. P., M., & O. Ry. Co., Elevator	3	1	40		40		2	300
Hines Lumber Co.	7		220		220	1	16	1,300
Kentfield & Lameroux, Box factory	4		64	1	65	6	1	60
Northwestern Fuel Co.	3		50		50		2	100
Steinert & Co., R., Machine shops.	1		3		3		1	15
Times, The, Publishing	1		2	1	3			
Washburn Brewing Co.	10		6		6		1	20
Washburn Electric Light & Power Co.	1		3		3		3	400
Washburn News & Itemizer, Publishing	1		3	1	4			
Washburn Steam Laundry	1		2	2	4			
Total	35	1	418	5	423	7	27	2,295
WATERLOO, JEFFERSON CO.								
Drew Elevated Carrier Co.	1		7		7			
Fountain Creamery, The	1		4		4		1	30
McCracken Bros., Elevator	3		1		1			
Roach, Seeber Co., Elevator	1		1		1			
Waterloo Canning Factory	3		22	8	30		1	80
Waterloo Democrat, Publishing	1		3	2	5			
Waterloo Electric & Milling Co.	2		2		2		2	230
Waterloo Journal, Publishing	1		1	2	3			
Waterloo Malting Co.	2	1					2	100
Waterloo Roller Mills, Grist mill ..	1	1	2		2			
Total	16	2	43	12	55		6	440

TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. P.
WATERTOWN, JEFFERSON CO.								
American Malt & Grain Co.	4	4	21		21		3	300
American Cigar Co.	2		60	140	200	8		
Archie Bros., Monuments	1		3		3			
Badger State Co., Beverages	1		3		3			
Beals & Torrey Shoe Co.	2		75	25	100	5		
Brandt-Dent Co., Brass fixtures		1	50		50			
Befeldt, Otto, Co., Boilers	1		10		10			
City Water Works	2		3		3		2	180
Cordes, L. H., & Co., Brick	2		30		30	3	3	73
Dornfeld, Kunert Co., Boilers	9		80		80		1	125
Drew Mfg. Co., Manure spreaders	1		3		3			
Globe Milling Co., Flour mill	3	2	16		16			250
Hartig, Wm. Co., Brewery	9	3	29		29		3	220
Henry, Ira L. Co., Paper boxes ..	2	1	20	80	100	12	1	40
Hopkins Mfg. Co., Foundry	1		10		10		1	40
Jahnke Creamery Co.	3		9	1	10		1	40
Kehr Bros., Machinery	1		2		2			
Koenig, R. P. & Co., Flour mill ..	4	2	7		7		1	80
Lemmahirt, H., Cooperaage	1		10		10			
Lewis, G. B. Co., Beekeepers' supplies ..	3	1	83	7	90	1	2	130
New Method Laundry	1		3	3	6	1	1	8
Republican, Publishing	1		3		3			
Watertown Concrete Bldg. Block Co.	1		4		4			
Watertown Electric Co.	2		5		5		3	300
Watertown Gas Co.	5		4		4		1	25
Watertown Gazette, Publishing ..	1		3		3			
Watertown Novelty Works, Office fixtures, etc.	1		4		4			
Watertown Steam Laundry	2		3	5	8			
Watertown Table Slide Co.	4		17	1	18	3	1	40
Watertown Times, The, Publishing ..	1		19	1	20			
Watertown Waterworks	1		2		2		2	400
Wells, M. D., Shoe Co.	4		100	50	150	20		
Weltburger Printing Co.	1		5		5			
Wiens, A. R., Brush Co.	4		36	4	40	5	1	40
Total	81	14	742	317	1,059	58	29	2,370
WAUKESHA, WAUKESHA CO.								
Almanaria Mineral Spring Co.	1		5		5	3	1	10
Anderson, W. H., Mineral water ..	1		2		2		1	4
Arcadian Mineral Springs		1	15		15		1	20
Bethesda Mineral Springs	1		14		14	4	1	15
Blair Bros., Mfg. Co., Foundry ..	2	1	7		7			
Crystal Mineral Springs Co.	1		8		8		1	20
Glen Rock Mineral Springs Co.	1		4		4		1	6
Globe Elevator Co.		1	2		2		1	40
Griffin, E. A. Feed mill	1		2		2			
Gutheil, F. R., & Son, Flour mill ..	1		4		4			
Hank, Min. Spring Co.	1		8		8		1	3
Hoag & Rankin Feed Co.	1		2		2			
Jones, K., Mfg. Co., Wagon and sleigh fixtures ..	1		3		3		1	8
Kent Lubricating Co., Grease	1		3		3			
Ladewig, W. E., Machine shop	1		6		6	1	1	20
Merton Bros., Publishing	1		5	1	6			

TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Bollers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
WAUKESHA—Continued.								
Milwaukee Elec. Ry. & L. Co.	1		5		5		3	460
Milwaukee, Waukesha Brewing Co.	2	1	42	17	59	2	2	200
Modern Steel Structural Co.	2		140	2	142	3	2	200
Morrows' Laundry	1		2	1	3			
National Water Co., Mineral water	2	1	66		66		1	40
Palace Laundry	1		1	6	7		1	25
Saratoga Mills, Flour and feed ...	1	1	4		4			
Silurian Min. Spring Co.	5		9		9			
Sing, Lee, Laundry	1		2		2			
Spring City Laundry	1		2	8	10		1	15
Thomas Press, The, Publishing.....	1		3		3			
Waukesha Brewery Co.	8	1	64	36	100	2	2	200
Waukesha Canning Co.	3		66	65	131	31	4	200
Waukesha Concrete Block Co.	1		7		7		1	30
Waukesha Despatch, The, Publish- ing	1		3	1	4	1		
Waukesha Expanded Metal Co.	1		8		8			
Waukesha Freeman, The, Publish- ing	1		4	1	5	1		
Waukesha Gas & Electric Co.	2		15		15		2	160
Waukesha Grain & Produce Co., Feed Mill	1		4		4		1	30
Waukesha Lime & Stone Co.	7	1	130		130	10	2	200
Waukesha Malleable Iron Co.	2		222	18	240	11	3	210
Waukesha Mfg. Co., Boxes, sashes, doors	1		8		8		1	15
Waukesha Motor Co., Auto. repairs	1		3		3			
Waukesha Roxo Mineral Springs...	1		1		1		1	4
Waukesha Stone & Quarry Co.	2		32		32		1	80
Waukesha Waterworks	1		5		5		2	225
Weber Brewery Co.	2	1	15		15		1	40
Wilbur Lumber Co.	4		65		65	2	2	130
Wis. Butter & Cheese Co.	1		6		6		1	30
Total	67	9	1,024	156	1,180	71	44	2,715
WAUNAKEE, DANE CO.								
Coldwell & Neill, Elevator	1		3		3			
Waunakee Creamery	1		2		2			
Total	2		5		5			
WAUPACA, WAUPACA CO.								
Central Lumber Co.	10		6		6			
City Mills, Feed mill	1		2		2			
City Waterworks	1		1		1			
Crescent Roller Mills, Flour	1		2		2			
Hanson, A. M., Planing mill	2		10		10		1	40
Nelson, A. G., & Co., Planing mill	8	2	6		6			
Republican, The, Publishing	1		3	2	5			
Trachte, Wm., Butter	1		2		2		1	80
Union Starch Co.	4		10		10		1	80
Waupaca Elec. Light & Ry. Co.	2		7		7		2	100
Waupaca Foundry	4		3		3		1	10
Waupaca Hat Factory	1		3	6	14			

TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Bo'lers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
WAUPACA—Continued.								
Waupaca Post, The, Publishing	1		6	1	7			
Waupaca Record, The, Publishing.	1		4		4			
Waupaca Roller Mills, Flour and feed	1	1	6		6			
Waupaca Woolen Mills	2		10	5	15			
Wisconsin Granite Co.	1		30		30		1	100
Total	12	3	116	14	130		7	410
WAUPUN, FOND DU LAC CO.								
Althouse-Wheeler Co., Windmills, etc.	14		30		30		1	90
Breyer, Whiting & Co., Windmills, etc.	2		6		6		1	30
Kalo, John, Brewery	3	2	4		4		1	40
Kohl, L. P., Flour and feed	1	1	2		2			
Morris, J. S., Carriage Co.	3	1	25		25			
Olson, Ole, Flows, etc.	3		3		3		1	6
Palma Shoe Co.		1	56	22	78	7	1	30
Paramount Knitting Co.	1		5	48	53	7		
Shaler-Hartgerink Co., Umbrellas..	1		30	20	50			
Troy Steam Laundry	1		2	4	6			
Waupun Democrat, The Publishing		1	3	1	4	1		
Waupun Elec. Light & Water Co.	1		4		4		3	180
Waupun Democrat, The, Publishing		1	3	1	4	1		
Wisconsin Malt & Grain Co.		1	2		2			
Zimmermann, F. F., & Sons, Wagons	4		20		20			
Total	35	7	195	96	291	15	9	220
WAUSAU, MARATHON CO.								
Badger Laundry	1		2	13	15	2	1	20
Barker & Steward, Saw mill.....	13		240		240		12	1,500
Central Wis. Publishing.....	1		4		4			
Chicago Excelsior Co.	4		16		16			
Covey, Wm., Soda water	1		2		2			
Curtis & Yale, Sash, doors, mouldings	12	2	385	4	389	45	8	800
Curtis & Yale, Siding, flooring, ceiling	6	2	70		70	3	2	200
Goodwillie Bros., Mfg. boxes.....	5		130	8	138	15	4	360
Heinke, B., Machinist.....	1		1		1			
Hirsch, Max, Saw and planing mill	6		5		5		1	40
Karas, L., Machinist.....	1		2		2		1	10
Kickbusch Roller Mills.....	3	1	3	1	9		1	80
Janke & Weise, Bar and store furniture	4		17		17		1	70
Loewenthal & New Co., Excelsior..	5		18		18		1	100
McEachron, H. E., Flour mill.....	4	2	29		20			
Marathon Co. Dairy Co.	3		5		5		1	25
Marathon Granite Co., Monuments	3		58	2	60		1	50
Mathie Brewing Co.	6	2	14	1	15		1	100
Meisner, H., & Sons, Monuments.	3		3		3			
Mortenson Lumber Co.	13		75		75		4	350
Murray, J. D., Mfg. Co., Saw mill machinery	10	1	92	2	94		1	65

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TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
WAUSAU—Continued.								
Northern Milling Co., Flour.....	5	1	8	.....	8	.....	1	100
Philosopher Press, Publishing.....	1	.....	1	1	2	.....	.....	.....
Rommel Bros., Soda water.....	1	.....	2	.....	2	.....	.....	.....
Ruder, Geo., Brewing Co.....	4	3	16	.....	16	.....	3	250
Steward, Alexander, Lumber Co.....	9	.....	260	.....	260	1	4	400
Stolze, Paul F., Bookbindery and publishing.....	1	.....	6	3	9	.....	.....	.....
Underwood Veneer Co.....	15	.....	169	.....	169	24	5	320
United States Leather Co.....	13	.....	60	.....	60	.....	2	290
Wausau Box & Lumber Co.....	10	.....	123	.....	123	15	2	200
Wausau Canning Co.....	7	.....	69	.....	80	.....	2	130
Wausau Cigar Box Factory.....	1	.....	1	5	6	.....	.....	.....
Wausau Daily News, Publishing.....	1	.....	7	.....	7	.....	.....	.....
Wausau Daily Record, Publishing.....	1	.....	10	.....	10	.....	1	5
Wausau Electric Co., Light and power.....	2	.....	3	.....	3	.....	4	540
Wausau Foundry & Machine Shop.....	2	.....	12	.....	12	.....	1	30
Wausau Gas Co.....	4	.....	4	.....	4	.....	2	12
Wausau Herald, Publishing.....	1	.....	5	3	13	2	.....	.....
Wausau Laundry Co.....	1	.....	5	13	23	.....	1	20
Wausau Novelty Co.....	6	.....	63	.....	63	10	2	145
Wausau Pilot, Publishers.....	1	.....	6	1	7	.....	.....	.....
Wausau Quartz Co., Quartz sand.....	5	.....	7	.....	7	.....	1	40
Wausau Sand Paper Co.....	4	.....	24	6	30	4	1	60
Wausau Water Works.....	2	.....	4	.....	4	.....	2	300
Wausau Wochenblatt, Publishing.....	1	.....	3	1	4	1	.....	.....
Werheim Mfg. Co., Sash, doors, blinds.....	5	.....	61	.....	61	2	2	130
Wheeler Timlin Lumber Co.....	6	.....	20	.....	20	.....	1	50
Wisconsin Box Co.....	7	.....	54	1	55	5	2	250
Total	221	14	2,161	95	2,256	129	79	7,044
WAUTOMA, WAUSHARA CO.								
Municipal Gas Co., Light.....	1	.....	1	.....	1	.....	.....	.....
Northern Grain Co., Elevator.....	1	.....	5	.....	5	.....	.....	.....
Waushara Argus, Publisher.....	1	.....	3	1	4	.....	.....	.....
Wautoma Creamery Co.....	1	.....	1	.....	1	.....	1	12
Wautoma Bottling Works.....	1	.....	2	.....	2	.....	.....	.....
Wautoma Milling Co., Flour.....	1	.....	3	.....	3	.....	.....	.....
Total	6	.....	15	1	16	.....	1	12
WAUWATOSA, MILWAUKEE CO.								
Burnham Bros., Brick yard.....	6	.....	125	.....	125	10	3	325
Gittelman Brewing Co.....	9	5	74	.....	74	1	3	240
Gillette Leather Co., Tannery.....	2	1	28	.....	28	4	2	150
Johns, H. W., & Manville Co., Magnetic and asbestos goods.....	4	1	172	3	175	1	9	1,350
Kraatz, Chas., Brick yards.....	5	.....	70	.....	70	.....	2	195
Lenz, Adolph, Sash and doors.....	6	.....	40	.....	40	1	1	100
Lindemann, J. P., & Son, Tinware.....	2	1	12	7	19	7	1	80
Manegold, A. F. & L., Stone quarry.....	4	.....	16	.....	16	.....	1	75
Milwaukee County Farm & Alms House, Power plant.....	1	.....	5	.....	5	.....	3	300
Milwaukee County Farm & Alms House, Steam laundry.....	1	.....	2	4	6	.....	.....	.....

TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
WAUWATOSA—Continued.								
Milwaukee County Hospital, Steam laundry	2	.....	5	2	7	.....	2	160
Milwaukee County Hospital, Power plant	1	.....	6	.....	6	.....	4	320
Miller, Fred, Brewing Co.	13	3	284	23	312	22	6	1,383
Monarch Stone Co., Stone quarry..	6	.....	49	.....	49	.....	2	175
Northwestern Chemical Co.	1	.....	4	.....	4	.....	1	80
Wauwatosa Milling, Fuel & Lumber Co., Elevator and feed mill.....	.....	1	5	.....	5	.....	.....	.....
Wauwatosa News, Publishing.....	1	.....	1	.....	1	.....	.....	.....
Wauwatosa Water Works.....	1	.....	1	.....	1	.....	2	180
Total	70	11	899	44	943	46	42	4,690
WEST ALLIS, MILWAUKEE CO.								
Allis Chalmers Co., Mach. works... 15	2	2	4,000	.....	4,000	.....	5	1,750
Kerney & Pecker, Machine tools... 2	.....	.....	90	.....	90	.....	1	60
Milwaukee Electric Co., Electric machines	3	.....	250	.....	250	.....	3	330
Milwaukee Light, Heat & Traction Co., Electric machinery.....	1	.....	3	.....	3	.....	2	200
Prescott, Fred M., Steam Pump Co. 7	1	.....	198	2	200	.....	2	160
Radcliffe & Porter Mfg. Co., Sash, doors, etc.	4	.....	15	.....	15	1	.....	.....
Rosenthal Corn Husker Co.	2	1	20	.....	20	.....	.....	.....
Tobin & Gerlinger, Foundry.....	1	.....	13	.....	13	.....	1	35
West Allis Malleable Iron & Chain Belt Co.	5	.....	150	.....	150	25	2	120
Total	40	4	4,744	2	4,746	26	16	2,625
WEST BEND, WASHINGTON CO.								
Benes Gehl Mfg. Co., Repairs	3	.....	20	.....	20	1	1	30
Enger Kress Pocket Book Co.	2	.....	65	65	130	9	.....	.....
Kuehlthian, Adam, Electric light plant	2	.....	3	.....	3	.....	1	100
Schmidt & Stork, Wagons.....	4	.....	30	.....	30	.....	1	40
Silberzahn Bros., Machine shop....	.....	1	5	.....	5	.....	.....	.....
West Bend Brewing Co.	9	5	30	.....	30	.....	3	240
West Bend Knitting Mills.....	1	.....	12	28	40	.....	.....	.....
Total	21	6	165	93	258	10	6	460
WESTBORO, TAYLOR CO.								
Frank, August, H., Woodworking ..	1	3	3	1	35
Westboro Lumber Co.	6	150	150	5	7	370
Total	7	153	153	5	8	405

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TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
WESTBY, VERNON CO.								
Bekkedahl, M. H., Leaf tobacco ..	1		25	30	55			
Cargill, W. W., Co., Elevator		1	1		1			
Haakenson Bros., Mfg. boxes	2		5		5		1	20
Shannon, Chas., Leaf tobacco	1		27	26	53			
Thoreson, Theodore, Planing mill ..	5		5		6		1	50
Westby Co-op. Creamery	2		1		1		1	20
Westby Electric Light Plant	1		1		1		1	100
Westby Times Publishing	1		2					
Total	13	1	67	56	123		4	130
WESTFIELD, MARQUETTE CO.								
Central Union, Publishers	1		2		2			
Cochen, T. H. & Co., Feed mill ..	1		1		1			
Westfield Creamery Co.	1		1		1		1	12
Westfield Milling & Electric Light Co.	1		3		3			
Total	4		7		7		1	12
WESTON, DUNN CO.								
Davis & Star Lumber Co.	1		65		65		3	150
Total	1		65		65		3	150
WEST SALEM, LA CROSSE CO.								
Neshono Light Co., Light and feed mill	1		2		2			
West Salem Co-op. Creamery	3		4		4		1	20
West Salem Nonpareil Journal ..	1		1	2	3			
Total	5		7	2	9		1	20
WEYAUWEGA, WAUPACA CO.								
Baldwin Creamery Co.		1	3		3		1	12
Northrup Dental Burr Co.	1		6		6			
Weed & Gumaer Mfg. Co., Flour ..		2	5		5			
Weed & Gumaer Mfg. Co., Planing ..	2		4		4			
Weyauwega Chronicle, Publishing ..		1	1	3	4			
Weyauwega Co-operative Creamery Co.	1		2		2		1	20
Weyauwega Electric Light Co.	1		2		2			
Weyauwega Roller Mills, Flour	1		3		3			
Total	6	4	26	3	29		2	32
WEYERHAUSER, RUSK CO.								
Banner Wagon Co.	2		25		25		1	50
Soo Ry., Round house and shop ...	2		10		10		1	40
Total	4		35		35		2	70

TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Build'ngs.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
WHITCOMB, SHAWANO CO.								
Whitcomb Lumber Co.	1		35		35		4	160
Total	1		35		35		4	160
WHITEHALL, TREMPLEALEU CO.								
Cargill, W. W. Co., Elevator		1	1		1			
Steig & Torgerson, Elevator	1		1		1			
Whitehall Creamery Ass'n	1		2		2		1	20
Whitehall Elec. Light Plant	1		1		1			
Whitehall Flouring Mill		1	2		2			
Whitehall & Pigeon Trading Ass'n Elevator	1		1		1			
Whitehall Times, Publishing	1		3		3			
Wood, D., Elevator	1		1		1			
Total	6	2	12		12		1	20
WHITEWATER, WALWORTH CO.								
Borden, F. G. & Co., Leaf tobacco			32	46	78			30
Klinger, W., Brewery	5	2	4		4		1	15
New Method Laundry	1		1	2	3		1	24
Nonpareil Creamery	1		2		2		1	
Quill & Shepard, Elevator and feed mill		1	5		5			
Stone Mill Co., Flour and feed	1		3		3			
Taft, W. J., Machine shop	1		2		2			
Union Produce Co., Creamery	1	1	4		4		1	20
Weyher & Son, Wagons	5	1	20		20		1	120
Whitewater Electric Light Plant	2		6		6		2	225
Whitewater Gazette, Publishing	1		2	2	4			
Whitewater Register, Publishing	1		5	4	9		1	5
Whitewater Robe Tannery	1		4		4		1	15
Wisconsin Dairyman Supply Co.	2		5	1	6			
Total	22	6	95	55	150		9	454
WILDROSE, WAUSHARA CO.								
Jenks, O. J., & Son, Saw mill	1		8		8		1	30
Northern Grain Co., Elevator	1		5		5			
Rose Milling Co., Flour	1		2		2			
Starks & Skeel, Feed mill	1		1		1			
Wild Rose Creamery Co.	1		1		1		1	10
Wild Rose Times, Publishing	1		1		1			
Total	6		18		18		2	40
WILSON, ST. CROIX CO.								
Keelyine Feed mill	1		2		2		1	30
Wilson Creamery Co.	2		2		2		1	18
Total	4		4		4		2	48

FACTORY INSPECTION.

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TABLE I—ESTABLISHMENTS INSPECTED—Continued.

Location, name and business.	Buildings.		Employees.				Boilers.	
	Under 3 stories.	3 or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total h. p.
WILTON, MONROE CO.								
Central Wis. Creamery	3		3		3		1	20
Hett, Christ, Mfg. Wagons, carriages		1	6		6			
Schell, Henry, Elevator		1	1		1			
Wilton Co-op. Creamery	3		2		2		1	15
Wilton Herald, Publishing	1		2		2			
Wilton Roller Mills, Flour	1		2		2			
Total	2	2	16		16		2	35
WINNECONNE, WINNEBAGO CO.								
Local, The, Publishing	1		1	2	3			
Masterson, Martin, Machine shop	1		1		1			
Milwaukee Elevator Co.	1		1		1			
Schneider Bros. & Maeder, Flour	1	1	5		5		1	110
Westfield Creamery Co.	1		1		1		1	12
Wis. Canning Co.	2		13	200	213		1	70
Total	7	1	22	202	224		3	132
WITHEE, CLARK CO.								
Paulson, P. A., Saw mill	2		12		12		2	70
Total	2		12		12		2	70
WITTENBERG, SHAWANO CO.								
Enterprise, The, Publishing	1		2		2			
For Gammel Og Ung, Publishing	1		5		5			
Viking Lumber Co., Electric light	1		1		1			
Viking Lumber Co., Planing mill	3		15		15		2	150
Wittenberg Bottling Works	1		2		2			
Total	7		25		25		2	150
WONEWOC, JUNEAU CO.								
Wonewoc Creamery	1		1		1		1	20
Wonewoc Milling Co., Flour	1	1	4		4			
Wonewoc Reporter, The, Publishing	1		1		1			
Total	3	1	6		6		1	20
WOODVILLE, ST. CROIX CO.								
Everson, Olaf, Elevator and feed mill	2		3		3			
Total	2		3		3			

TABLE II—ESTABLISHMENTS INSPECTED—SUMMARY BY CITIES.

Number.	City and county.	Number of establishments.			Employees.				Boilers.		No. establishments having other power.
		Under three stories.	Three or more stories.	Buildings.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total horse power.	
1	Abbotsford, Clark Co.	3	9	60	3	63	...	6	270	...	5
2	Albany, Green Co.	6	6	1	39	30	69	3	1	80	2
3	Algoma, Kewaunee Co.	10	33	2	382	56	438	27	9	740	5
4	Alma, Buffalo Co.	3	3	...	7	...	7	...	1	25	2
5	Amery, Polk Co.	8	7	2	55	...	55	...	5	205	4
6	Amherst, Portage Co.	5	5	...	10	1	11	1	2	32	3
7	Annita, Bayfield Co.	2	2	...	80	...	80	...	3	145	...
8	Antigo, Langlade Co.	20	46	7	380	12	392	18	26	1,870	8
9	Appleriver, Polk Co.	1	1	...	1	...	1	...	...	...	1
10	Appleton, Outagamie Co.	60	89	18	1552	471	2,023	51	69	8,564	30
11	Arbor Vitae, Vilas Co.	2	25	...	719	1	720	...	14	1,090	...
12	Areadia, Trempealeau Co.	9	10	3	18	2	20	...	6	370	5
13	Ashland, Ashland Co.	28	91	2	1591	22	1,613	...	56	5,045	7
14	Athens, Marathon Co.	7	27	2	165	...	165	3	14	973	1
15	Atlanta, Rusk Co.	1	6	...	83	...	83	...	3	450	...
16	Baldwin, St. Croix Co.	1	1	...	3	...	3	...	1	25	...
17	Bangor, La Crosse Co.	5	12	2	23	1	24	...	4	255	2
18	Baraboo, Sauk Co.	22	51	2	260	84	344	4	11	691	15
19	Barksdale, Bayfield Co.	1	51	...	200	...	200	...	3	880	...
20	Barron, Barron Co.	7	9	1	105	...	105	2	5	290	2
21	Barronett, Barron Co.	3	3	...	16	...	16	...	3	75	...
22	Bayfield, Bayfield Co.	7	22	...	335	1	336	...	11	1,100	2
23	Beaver Dam, Dodge Co.	21	42	11	903	265	1,168	15	21	1,642	8
24	Reldenville, Pierce Co.	3	3	1	14	...	14	...	2	62	...
25	Bellwood, Douglas Co.	1	1	...	40	...	40	...	2	80	...
26	Beloit, Rock Co.	40	117	6	3377	216	3,593	5	38	4,120	26
27	Benton, Lafayette Co.	12	14	...	159	...	159	...	15	1,245	...
28	Berlin, Green Lake Co.	27	41	5	397	280	677	3	14	968	18
29	Bibon, Bayfield Co.	1	4	...	120	...	120	...	2	250	...
30	Birchwood, Washburn Co.	2	8	...	70	...	70	4	3	205	...
31	Birnamwood, Shawano Co.	4	9	...	43	...	43	...	2	140	1
32	Black River Falls, Jackson Co.	6	6	...	34	1	35	...	...	...	6
33	Blair, Trempealeau Co.	6	5	2	13	...	13	...	3	64	3
34	Bloomer, Chippewa Co.	9	14	2	32	2	34	...	4	129	6
35	Boscobel, Grant Co.	12	23	3	80	8	88	...	7	324	6
36	Brandon, Fond du Lac Co.	6	6	...	7	2	9	...	1	15	5
37	Brill, Barron Co.	1	1	...	1	...	1	...	1	20	...
38	Brillion, Calumet Co.	8	12	4	143	1	144	...	6	357	2
39	Bristol, Kenosha Co.	2	1	1	8	...	8	...	2	60	...
40	Brodhead, Green Co.	9	9	2	37	44	81	...	2	70	7
41	Brokaw, Marathon Co.	1	19	...	265	10	275	...	5	1,200	...
42	Brooklyn, Green Co.	2	7	...	12	...	12	...	2	100	...
43	Brown's Spur, Marinette Co.	1	1	...	25	...	25	...	1	100	...
44	Bruce, Rusk Co.	1	8	...	75	...	75	4	3	140	...
45	Buncombe, Lafayette Co.	1	2	...	60	...	60	...	3	400	...
46	Bundy, Lincoln Co.	1	6	...	125	...	125	...	4	600	...
47	Burkhardt, St. Croix Co.	1	2	2	10	...	10	...	...	...	1
48	Burlington, Racine Co.	13	37	4	270	96	366	...	19	1,430	6
49	Butternut, Ashland Co.	6	14	...	136	...	136	3	5	406	1
50	Cambria, Columbia Co.	5	5	...	7	2	9	...	2	100	3

TABLE II—ESTABLISHMENTS INSPECTED—SUMMARY BY CITIES.
(Continued).

Number.	City and county.	Number of establish- ments.			Build- ings.		Employees.				Boilers.		No establishments having other power.
		Under three stories.	Three or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total horse power.				
										Under three stories.	Three or more stories.	Male.		Female.	Total.	Under 16 yrs. of age.	No.	Total horse power.
51	Cambridge, Dane Co.	4	7	63	20	83	1	4	135	1			
52	Cameron, Barron Co.	4	4	13	2	15	1	3	75	1			
53	Campbellsport, Fond du Lac Co.	3	3	5	3	8	...	1	50	3			
54	Caroline, Shawano Co.	2	2	13	...	13	...	1	50	1			
55	Carrollville, Milwaukee Co.	2	17	2	180	51	231	11	3,500	...			
56	Cashton, Monroe Co.	9	13	1	74	26	100	...	5	157	4		
57	Cassville, Grant Co.	5	13	1	72	1	73	...	6	335	1		
58	Cavour, Forest Co.	1	1	...	16	...	16	...	1	65	...		
59	Cedarburg, Ozaukee Co.	13	38	10	245	47	292	...	12	1,030	6		
60	Cedargrove, Sheboygan Co.	2	4	1	23	...	23	...	2	90	1		
61	Centuria, Polk Co.	1	1	...	10	...	10	...	1	50	...		
62	Chaseburg, Vernon Co.	4	3	1	9	...	9	...	1	12	3		
63	Chilton, Calumet Co.	17	47	7	76	3	79	...	13	831	9		
64	Chippewa Falls, Chippewa Co. ...	26	72	9	1282	78	1,360	5	32	3,540	18		
65	Clearlake, Polk Co.	2	1	1	4	...	4	...	1	18	1		
66	Cleveland, Manitowoc Co.	4	4	...	16	4	20	1	1	65	...		
67	Clintonville, Waupaca Co.	7	11	1	30	7	37	...	8	403	2		
68	Colfax, Dunn Co.	4	5	1	12	...	12	...	1	60	3		
69	Collins, Manitowoc Co.	3	8	...	56	...	56	...	3	95	...		
70	Columbus, Columbia Co.	8	16	7	88	17	105	14	8	655	3		
71	Combined Locks, Outagamie Co.	1	4	1	240	5	245	...	8	1,500	...		
72	Conover, Vilas Co.	1	1	...	12	...	12	...	1	60	...		
73	Coon Valley, Vernon Co.	5	3	2	11	...	11	...	1	12	4		
74	Corliss, Racine Co.	1	6	...	250	...	250	...	2	150	...		
75	Couderay, Sawyer Co.	1	7	...	75	...	75	...	1	100	...		
76	Crandon, Forest Co.	7	19	...	213	14	227	4	8	675	2		
77	Cuba, Grant Co.	15	16	1	231	1	232	...	19	1,450	4		
78	Cudahy, Milwaukee Co.	4	31	17	1564	37	1,601	44	26	4,380	...		
79	Cumberland, Barron Co.	8	16	...	124	1	125	9	7	555	3		
80	Darlington, Lafayette Co.	5	9	...	11	1	12	...	2	162	4		
81	Dartford, Green Lake Co.	4	4	...	8	1	9	...	1	20	3		
82	Deerbrook, Langlade Co.	2	2	1	8	...	6	...	2	120	...		
83	Deerfield, Dane Co.	8	5	...	69	78	138	2	2	43	0		
84	Deerpark, St. Croix Co.	3	2	1	6	...	6	...	1	20	2		
85	Delavan, Walworth Co.	10	13	1	51	46	97	1	7	410	5		
86	De Pere, Brown Co.	18	61	13	525	356	881	28	24	4,125	10		
87	Deronda, Polk Co.	1	1	...	2	...	2	...	1	40	...		
88	Dodgeville, Iowa Co.	8	18	1	42	5	47	...	6	245	3		
89	Dorchester, Clark Co.	3	3	1	59	...	59	...	4	245	...		
90	Drummond, Bayfield Co.	1	12	...	150	...	150	2	2	200	...		
91	Dunbar, Marinette Co.	1	6	...	136	6	142	1	6	600	...		
92	Eaglepoint, Chippewa Co.	1	...	1	1	...	1	...	1	...	1		
93	Eagle River, Vilas Co.	1	1	...	2	...	2	...	2	150	...		
94	Eau Claire, Eau Claire Co.	51	181	13	2320	270	2,590	75	67	6,955	23		
95	Edgar, Marathon Co.	4	9	...	81	...	81	...	6	175	1		
96	Edgerton, Rock Co.	32	34	2	1003	633	1,636	17	1	10	31		
97	Elkhart, Sheboygan Co.	2	...	2	2	...	3	...	...	...	2
98	Elkhorn, Walworth Co.	10	15	2	46	8	54	...	9	410	2		
99	Elk mound, Dunn Co.	3	3	1	5	...	5	...	1	12	2		
100	Ellsworth, Pierce Co.	8	7	2	33	...	33	...	5	275	4		

TABLE II—ESTABLISHMENTS INSPECTED—SUMMARY BY CITIES.
(Continued).

Number.	City and county.	Number of establish- ments		Build- ings.		Employees.				Boilers.		
		Under three stories.	Three or more stories.	Male.	Female.	Total.	Under 16 yrs of age.	No.	Total horse power.	No. establishments having other power.		
101	Elmgrove, Waukesha Co.	1	1	....	1	....	1	....	....	....	....	1
102	Elmwood, Pierce Co.	1	1	....	2	....	2	....	1	16	....	4
103	Elroy, Juneau Co.	8	11	1	57	4	61	....	7	470	4	4
104	Evansville, Rock Co.	13	33	1	214	123	337	1	3	660	9	9
105	Fairchild, Eau Claire Co.	4	5	....	5	3	8	....	4	270	1	1
106	Fennimore, Grant Co.	6	8	....	15	1	16	....	3	180	4	4
107	Florence, Florence Co.	5	19	....	246	....	246	....	12	1,210	2	2
108	Fond du Lac, Fond du Lac Co.	50	125	29	2894	486	3,380	87	52	6,335	22	22
109	Forest Jc., Calumet Co.	1	....	1	4	....	4	....	....	....	....	1
110	Fort Atkinson, Jefferson Co.	13	44	7	550	47	597	3	17	980	1	1
111	Fountain City, Buffalo Co.	8	7	3	34	....	34	....	5	232	3	3
112	Foxlake, Dodge Co.	5	4	2	15	....	15	....	2	40	3	3
113	Frederic, Polk Co.	4	3	1	89	....	89	....	3	260	....	....
114	Fremont, Waupaca Co.	2	2	....	4	....	4	....	3	37	....	....
115	Gagen, Oneida Co.	1	4	....	65	....	65	....	3	250	....	....
116	Galesville, Trempealeau Co.	7	8	2	21	2	23	....	2	65	5	5
117	Gays Mills, Crawford Co.	1	1	....	25	29	54	....	....	....	....	1
118	Genoa Jc., Walworth Co.	4	7	....	51	....	51	....	5	256	2	2
119	Glendale, Monroe Co.	3	5	....	4	....	4	....	2	70	1	1
120	Glenwood, St. Croix Co.	1	2	....	2	....	2	....	1	20	....	....
121	Glidden, Ashland Co.	5	13	....	167	....	167	7	10	800	....	....
122	Grafton, Ozaukee Co.	3	9	2	22	28	50	4	2	16	2	2
123	Grand Rapids, Wood Co.	22	78	9	779	43	822	14	28	3,105	3	3
124	Grantsburg, Burnett Co.	3	2	1	36	....	36	....	2	80	1	1
125	Greenbay, Brown Co.	74	344	25	2791	378	3,169	13	105	12,980	20	20
126	Greenwood, Clark Co.	4	5	1	19	1	20	1	4	136	1	1
127	Hackley, Vilas Co.	3	8	....	190	....	190	1	4	660	....	....
128	Hammond, St. Croix Co.	1	1	....	2	....	2	....	1	20	....	....
129	Hancock, Waushara Co.	5	5	....	9	1	10	....	1	14	3	3
130	Hartford, Washington Co.	13	20	5	197	48	245	....	15	723	5	5
131	Haugen, Barron Co.	2	3	....	21	....	21	....	3	102	....	....
132	Hawthorne, Douglas Co.	2	3	....	52	....	52	....	4	230	....	....
133	Hayward, Sawyer Co.	6	10	....	426	....	426	27	8	750	2	2
134	Hazelgreen, Grant Co.	7	7	....	256	....	256	....	18	1,555	....	....
135	Hazelhurst, Oneida Co.	1	15	....	193	....	193	2	5	650	....	....
136	Heineman, Lincoln Co.	1	7	....	125	....	125	....	5	425	....	....
137	Highland, Iowa Co.	3	9	1	56	2	58	....	4	360	1	1
138	Hilbert, Calumet Co.	5	9	....	22	....	22	....	2	175	3	3
139	Hiles, Forest Co.	1	3	....	90	....	90	....	5	450	....	....
140	Hillsboro, Vernon Co.	6	9	1	23	1	24	....	5	250	1	1
141	Horicon, Dodge Co.	7	12	....	254	1	255	....	4	128	4	4
142	Horlicksville, Racine Co.	3	3	....	102	....	102	....	3	180	....	....
143	Hortonville, Outagamie Co.	8	20	3	28	....	28	....	7	315	....	....
144	Houlton, St. Croix Co.	1	7	....	250	....	250	....	4	500	....	....
145	Howards Grove, Sheboygan Co..	1	4	....	18	....	18	....	1	60	....	....
146	Hudson, St. Croix Co.	7	15	1	482	4	486	....	10	670	2	2
147	Hurley, Iron Co.	3	4	....	62	....	62	....	1	5	2	2
148	Independence, Trempealeau Co..	6	6	2	10	....	10	....	2	18	4	4
149	Iola, Waupaca Co.	4	3	1	12	2	14	3	145	1	1
150	Iron River, Bayfield Co.	5	8	281	281	4	10	655	1	1

FACTORY INSPECTION.

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TABLE II—ESTABLISHMENTS INSPECTED—SUMMARY BY CITIES.
(Continued).

Number.	City and county.	Number of establish-ments.		Build-ings.		Employees.				Boilers.		No. establi-ments having other power
		Under three stories.	Four or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total horse power.			
151	Irvington, Dunn Co.	1	6	100	....	100	4	3	140	....	1
152	Itaska, Douglas Co.	2	10	180	....	180	....	7	1,425	....	1
153	Janesville, Rock Co.	81	156	29,173	927	2,661	39	48	4,633	33	33	
154	Jefferson, Jefferson Co.	19	48	10,335	47	332	2	16	1,036	....	5
155	Jefferson Jr., Jefferson Co.	1	2	4	12	....	....	2	250	....	....
156	Johnson Creek, Jefferson Co.	4	6	1	14	1	15	4	169	....	1
157	Juneau, Dodge Co.	8	13	....	44	4	48	1	224	....	....
158	Kaukauna, Outagamie Co.	16	28	2	770	177	947	20	2,167	12	12	
159	Kempster, Langlade Co.	2	6	....	89	....	89	5	295	....	....
160	Kendall, Monroe Co.	4	5	....	7	....	7	2	100	....	1
161	Kenosha, Kenosha Co.	54	200	18,483	1148	6,011	495	88	10,270	2	2	
162	Kewaskum, Washington Co.	3	5	3	17	....	17	2	200	15	15
163	Kewaunee, Kewaunee Co.	14	42	4	265	72	337	18	615	4	4	
164	Kiel, Manitowoc Co.	9	24	4	178	1	179	6	475	6	6	
165	Kilbourn, Columbia Co.	6	9	1	13	2	15	3	160	5	5	
166	Kimberly, Outagamie Co.	1	4	1	225	....	225	....	3	300	....
167	Lac du Flambeau, Vilas Co.	1	9	....	256	....	256	7	700	....	....
168	La Crosse, La Crosse Co.	132	325	59,316	1131	4,295	168	88	8,307	74	74	
169	Ladysmith, Rusk Co.	12	23	....	249	3	252	2	1,250	4	4
170	Lake Geneva, Walworth Co.	14	16	1	121	7	128	11	655	6	6	
171	Lake Mills, Jefferson Co.	6	8	1	105	2	107	....	8	3	3
172	Lake Nebagamon, Douglas Co.	2	8	....	370	....	370	14	750	....	....
173	Lancaster, Grant Co.	8	12	1	25	24	49	4	292	3	3	
174	Laona, Forest Co.	1	10	....	300	....	300	2	600	....	....
175	Littlechute, Outagamie Co.	2	3	....	73	....	73	....	....	3	3
176	Little Falls, Polk Co.	3	4	1	17	4	21	1	16	2	2	
177	Lodi, Columbia Co.	4	4	1	7	3	10	3	60	3	3	
178	Lomira, Dodge Co.	5	5	....	16	....	16	2	75	2	2
179	Loyal, Clark Co.	6	17	....	58	....	58	2	406	1	1
180	Luck, Polk Co.	1	3	....	30	....	30	2	95	....	....
181	MacFarland, Dane Co.	2	2	....	12	15	27	....	....	1	1
182	Madison, Dane Co.	71	201	21,269	705	3,314	6	46	4,443	40	40	
183	Maiden Rock, Pierce Co.	1	1	....	2	1	3	....	....	1	1
184	Manawa, Waupaca Co.	6	9	2	54	1	55	3	160	3	3	
185	Manitowoc, Manitowoc Co.	50	237	27,179	506	2,298	95	56	5,750	19	19	
186	Marathon, Marathon Co.	3	4	....	22	....	22	....	315	....	....
187	Marinette, Marinette Co.	30	75	2,147	79	1,526	28	68	4,975	7	7	
188	Marion, Waupaca Co.	8	6	3	40	2	42	....	180	4	4
189	Markesan, Green Lake Co.	7	9	....	18	....	18	....	120	4	4
190	Marshfield, Wood Co.	19	73	3	619	60	679	46	1,945	5	5	
191	Mason, Bayfield Co.	1	3	....	225	....	225	9	1,800	....	....
192	Mausston, Juneau Co.	11	14	1	28	2	30	....	218	4	4
193	Mayville, Dodge Co.	17	36	5	286	2	288	19	1,980	6	6	
194	Mazomanie, Dane Co.	4	4	....	15	....	15	3	104	1	1
195	Medford, Taylor Co.	13	34	3	245	10	255	15	1,190	5	5	
196	Mellen, Ashland Co.	3	16	1	273	....	273	10	1,200	1	1
197	Menasha, Winnebago Co.	24	174	21,151	234	1,745	80	33	5,630	12	12	
198	Menomonee Falls, Waukesha Co.	7	18	6	197	....	197	15	1,620	1	1
199	Menomonie, Dunn Co.	21	43	5	508	7	515	5	1,015	12	12	
200	Meridian, Dunn Co.	2	3	....	4	....	4	2	28	2	2
201	Merrill, Lincoln Co.	24	142	5,173	19	1,751	72	58	5,220	9	9	
202	Milton, Rock Co.	4	5	....	18	48	66	1	20	2	2
203	Milton Junction, Rock Co.	5	5	....	25	29	54	1	15	2	2
204	Milwaukee, Milwaukee Co.	840	1966	665	1	2	66,402	3327	834,96,970	403	403	
205	Mineral Point, Iowa Co.	11	62	5	311	2	313	12	1,177	4	4	

TABLE II—ESTABLISHMENTS INSPECTED—SUMMARY BY CITIES.
(Continued).

Number.	City and county.	Number of establish- ments.	Build- ings.		Employees.				Boilers.		No. establish- ments having other power.
			Under three stories.	Three or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total horse power.	
206	Mondovi, Buffalo Co.	10	9	3	21	2	23	.....	3	65	7
207	Monico, Oneida Co.	1	1	1	20	.....	20	.....	2	700	.....
208	Monroe, Green Co.	15	30	4	130	22	152	.....	13	1,008	6
209	Montello, Marquette Co.	6	10	.....	158	1	159	.....	11	467	2
210	Montfort, Grant Co.	2	2	.....	4	.....	4	.....	.....	.....	2
211	Mosinee, Marathon Co.	1	2	.....	40	.....	40	.....	4	220	.....
212	Muscoda, Grant Co.	3	5	.....	30	1	31	.....	1	50	2
213	Nashville, Forest Co.	1	5	.....	40	.....	40	.....	2	150	.....
214	Necedah, Juneau Co.	2	3	1	7	.....	7	.....	1	60	1
215	Neenah, Winnebago Co.	21	57	11	415	168	583	3	20	2,463	13
216	Neillsville, Clark Co.	13	24	4	132	11	143	5	9	491	4
217	Nekoosa, Wood Co.	2	19	2	342	11	353	.....	7	1,350	2
218	Neshkora, Marquette Co.	1	1	.....	3	.....	3	.....	.....	.....	1
219	New Holstein, Calumet Co.	1	9	.....	41	.....	41	.....	2	85	4
220	New Lisbon, Juneau Co.	1	7	.....	3	.....	3	.....	1	20	.....
221	New London, Waupaca Co.	17	33	6	414	34	448	18	19	1,225	4
222	New Richmond, St. Croix Co.	12	18	5	207	3	210	.....	6	280	9
223	Niagara, Marinette Co.	1	15	.....	414	11	425	.....	6	1,200	1
224	North Milwaukee, Milwaukee Co.	7	29	2	581	5	586	12	11	1,900	2
225	Norwalk, Monroe Co.	3	4	1	5	.....	5	.....	2	93	1
226	Oconomowoc, Waukesha Co.	11	20	2	49	14	63	.....	10	695	6
227	Oconto, Oconto Co.	15	74	2	1019	10	1,029	15	45	3,815	6
228	Oconto Falls, Oconto Co.	8	38	1	227	7	234	4	17	1,180	6
229	Odanah, Ashland Co.	2	12	.....	483	11	494	2	11	1,125	3
230	Ogema, Price Co.	2	3	.....	27	.....	27	.....	3	262	.....
231	Omro, Winnebago, Co.	9	9	.....	10	4	23	.....	1	75	8
232	Onalaska, La Crosse Co.	3	9	2	73	7	80	5	3	150	1
233	Oostburg, Sheboygan Co.	2	12	1	80	24	104	10	2	145	.....
234	Oregon, Dane Co.	7	7	.....	9	2	11	.....	1	25	2
235	Osceola, Polk Co.	1	1	.....	10	.....	10	.....	.....	.....	2
236	Oshkosh, Winnebago Co.	118	370	40	5475	1048	6,523	438	104	12,352	56
237	Owen, Clark Co.	1	10	.....	252	3	255	.....	5	295	.....
238	Padus, Forest Co.	2	2	.....	27	.....	27	.....	2	130	.....
239	Palmyra, Jefferson Co.	1	1	.....	2	.....	2	.....	.....	.....	2
240	Pardeeville, Columbia Co.	6	6	.....	8	1	9	.....	.....	.....	6
241	Parkfalls, Price Co.	12	46	.....	408	15	423	.....	27	2,365	2
242	Pembine, Marinette Co.	2	2	.....	2	.....	2	.....	.....	.....	2
243	Pepin, Pepin Co.	3	4	.....	11	.....	11	.....	2	33	1
244	Peshtigo, Marinette Co.	7	29	1	322	3	325	.....	9	990	3
245	Phillips, Price Co.	5	17	.....	374	.....	374	7	10	1,025	3
246	Plainfield, Waushara Co.	3	2	1	7	1	8	.....	1	12	2
247	Platteville, Grant Co.	21	47	3	290	7	297	1	26	2,088	4
248	Pleasant Prairie, Kenosha Co.	1	13	.....	64	.....	64	.....	4	600	.....
249	Plymouth, Sheboygan Co.	23	57	2	247	27	274	2	17	1,037	10
250	Portage, Columbia Co.	29	58	4	278	400	678	16	18	765	11
251	Port Edwards, Wood Co.	1	8	.....	130	.....	130	2	6	1,000	.....
252	Port Washington, Ozaukee Co.	21	86	12	979	56	1,035	27	22	2,035	9
253	Prairie du Chien, Crawford Co.	23	36	4	198	73	271	1	13	838	12
254	Prentice, Price Co.	8	13	2	163	2	165	1	9	486	2
255	Prescott, Pierce Co.	5	6	.....	9	.....	9	.....	2	110	3

TABLE II—ESTABLISHMENTS INSPECTED—SUMMARY BY CITIES.
(Continued).

Number.	City and county.	Number of establish- ments.	Build- ings.		Employees,				Boilers.		No. establishment having other power.
			Under three stories.	Three or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total horse power.	
256	Princeton, Green Lake Co.....	8	13	2	24	45	69	.....	3	140	4
257	Racine, Racine Co.....	138	256	95	8200	1769	9,969	269	124	15,554	07
258	Racine Junction, Racine Co.....	1	1	.....	6	.....	6	.....	.....	.....	1
259	Radisson, Sawyer Co.....	1	5	.....	90	.....	90	.....	2	100	.....
260	Randolph, Dodge Co.....	7	14	1	97	19	118	7	6	280	8
261	Readstown, Vernon Co.....	2	2	.....	18	50	68	1	.....	.....	.....
262	Redgranite, Waushara Co.....	2	2	.....	131	2	133	.....	5	80	1
263	Reedsburg, Sauk Co.....	16	42	6	176	161	337	11	12	810	6
264	Reedsville, Manitowoc Co.....	1	1	.....	2	.....	2	.....	.....	.....	1
265	Rhinelander, Oneida Co.....	24	62	7	1036	10	1,046	3	52	5,075	9
266	Riblake, Taylor Co.....	4	20	.....	247	.....	247	.....	22	1,480	.....
267	Rice Lake, Barron Co.....	21	44	2	383	6	389	1	21	1,501	7
268	Richland Center, Richland Co.....	14	19	3	82	5	87	.....	10	672	6
269	Ripon, Fond du Lac Co.....	13	22	6	131	169	291	.....	10	795	7
270	River Falls, Pierce Co.....	18	17	5	79	4	83	.....	2	70	12
271	Riverside, Sheboygan Co. ¹	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
272	Roberts, St. Croix Co.....	1	1	.....	3	.....	3	.....	1	15	.....
273	Rubicon, Dodge Co.....	2	1	2	13	.....	13	.....	3	166	1
274	Rusk, Dunn Co.....	3	5	.....	6	.....	6	.....	2	60	2
275	St. Croix Falls, Polk Co.....	3	.....	3	503	3	506	.....	5	250	1
276	St. Nazianz, Manitowoc Co.....	1	8	1	34	12	46	.....	2	150	.....
277	Sarena, Washburn Co.....	1	1	.....	12	.....	12	.....	1	60	.....
278	Sauk City, Sauk Co.....	9	19	1	76	33	109	.....	6	360	3
279	Sawyer, Door Co.....	6	29	3	187	35	222	19	6	440	2
280	Saxon, Iron Co.....	3	3	.....	52	.....	52	.....	5	345	1
281	Scandinavia, Waupaca Co.....	4	.....	4	5	2	7	.....	1	15	3
282	Schleisingserville, Washington Co.....	9	10	.....	27	1	28	9	3	130	5
283	Schofield, Marathon Co.....	1	7	.....	250	.....	250	4	5	565	.....
284	Seymour, Outagamie Co.....	7	17	1	35	3	38	.....	5	305	2
285	Shawano, Shawano Co.....	10	32	5	166	12	178	.....	14	1,335	4
286	Sheboygan, Sheboygan Co.....	73	313	66	6497	1011	7,508	279	107	11,246	20
287	Sheboygan Falls, Sheboygan Co.....	10	35	6	283	8	291	1	7	600	3
288	Shell Lake, Washburn Co.....	5	14	1	87	2	89	.....	5	380	.....
289	Shiocton, Outagamie Co.....	2	1	1	2	1	3	.....	1	50	1
290	Shullsburg, Lafayette Co.....	7	6	1	37	2	39	.....	6	345	2
291	Signor, Sawyer Co.....	1	1	.....	22	.....	22	.....	1	80	.....
292	Soldiers Grove, Crawford Co.....	6	10	.....	29	.....	29	.....	4	320	2
293	Somerset, St. Croix Co.....	1	1	.....	4	.....	4	.....	.....	.....	.....
294	South Milwaukee, Milwaukee Co.....	13	65	2	1915	8	1,923	29	18	3,102	3
295	Sparta, Monroe Co.....	15	34	.....	142	307	449	.....	8	120	7
296	Splitrock, Shawano Co.....	1	2	.....	12	.....	12	.....	1	50	.....
297	Spoooner, Washburn Co.....	6	7	2	28	1	29	.....	2	90	3
298	Springvalley, Pierce Co.....	11	55	.....	246	2	248	2	17	1,905	3
299	Stanley, Chippewa Co.....	8	27	.....	779	2	781	22	15	575	3
300	Stetsonville, Taylor Co.....	3	2	.....	32	.....	32	.....	4	245	.....
301	Stevens Point, Portage Co.....	28	122	9	943	249	1,192	51	35	2,399	13
302	Stoddard, Vernon Co.....	4	4	.....	5	.....	5	.....	2	57	2
303	Stoughton, Dane Co.....	28	71	10	1024	397	1,421	18	14	1,122	15
304	Sturgeon Bay, Door Co.....	14	51	1	540	59	599	30	15	1,080	5
305	Sun Prairie, Dane Co.....	2	2	.....	40	115	155	.....	.....	.....	.....

¹ See under Sheboygan.

TABLE II—ESTABLISHMENTS INSPECTED—SUMMARY BY CITIES.
(Continued).

Number.	City and county.	Number of establish- ments.		Build- ings.		Employees				Boilers.		No. establish- ments having other power.
		Under three stories.	Three or more stories.	Male.	Female.	Total.	Under 16 yrs. of age.	No.	Total horse power.			
306	Superior, Douglas Co.....	87	275	18	3632	75	3,737	8	155	16,941	33	
307	Suring, Oconto Co.	1	1	1	2	2	2	2	1	108	1	
308	Theresa, Dodge Co.	4	3	1	10	10	10	4	4	108	4	
309	Thorp, Clark Co.	9	12	35	85	85	85	16	16	890	4	
310	Tigerton, Shawano Co.....	3	3	64	64	64	64	1	2	100	2	
311	Tomah, Monroe Co.	12	48	1	284	3	287	1	15	1,033	2	
312	Tomahawk, Lincoln Co.	9	65	4	494	4	498	15	21	2,680	2	
313	Turtle Lake, Barron Co.....	2	2	6	6	6	6	1	1	20	1	
314	Two Rivers, Manitowoc Co.....	17	94	11	1270	214	1,484	141	28	2,610	5	
315	Uiongrove, Racine Co.	3	3	13	13	13	13	2	2	110	1	
316	Unity, Marathon Co.	1	5	42	42	42	42	2	3	135	...	
317	Viola, Richland Co.	5	8	50	39	89	89	1	1	70	4	
318	Viroqua, Vernon Co.	9	8	1	51	121	172	2	2	160	8	
319	Wabeno, Forest Co.	3	14	1	260	260	260	10	10	1,050	...	
320	Walworth, Walworth Co.	6	9	49	1	50	50	6	6	970	4	
321	Washburn, Bayfield Co.	11	35	1	418	5	423	7	27	2,295	2	
322	Waterloo, Jefferson Co.....	10	16	2	43	12	55	6	6	440	7	
323	Watertown, Jefferson Co.....	34	81	14	742	317	1,059	58	29	2,270	17	
324	Waukesha, Waukesha Co.	45	67	9	1024	156	1,180	71	44	2,715	12	
325	Waukeee, Dane Co.	2	2	5	5	5	5	2	2	110	2	
326	Waupaca, Waupaca Co.	17	42	3	116	14	130	7	7	410	14	
327	Waupun, Fond du Lac Co.	15	35	7	195	96	291	15	9	220	8	
328	Wausau, Marathon Co.	48	221	14	2161	95	2,256	129	79	7,044	13	
329	Wautoma, Waushara Co.	6	6	15	1	16	16	1	1	12	5	
330	Wauwatosa, Milwaukee Co.....	19	70	11	899	44	943	46	42	4,630	4	
331	West Allis, Milwaukee Co.....	9	40	4	4744	2	4,746	26	16	2,625	2	
332	West Bend, Washington Co.....	7	21	6	165	93	258	10	6	460	3	
333	Westboro, Taylor Co.....	2	7	153	153	153	153	5	8	405	2	
334	Westby, Vernon Co.	8	13	1	67	56	123	3	4	190	4	
335	Westfield, Marquette Co.	4	4	7	7	7	7	1	1	12	3	
336	Weston, Dunn Co.	1	1	65	65	65	65	3	3	150	...	
337	West Salem, La Crosse Co.	3	5	7	2	9	9	1	1	20	3	
338	Weyerwega, Waupaca Co.....	8	6	4	26	3	29	2	2	32	6	
339	Weyerhauser, Rusk Co.	2	4	35	35	35	35	2	2	70	1	
340	Whitcomb, Shawano Co.	1	1	35	35	35	35	4	4	160	...	
341	Whitehall, Trempealeau Co.	8	6	2	12	12	12	1	1	20	4	
342	Whitewater, Walworth Co.....	14	22	6	95	55	150	9	9	454	5	
343	Wildrose, Waushara Co.	5	6	13	13	13	13	2	2	40	4	
344	Wilson, St. Croix Co.	2	4	4	4	4	4	2	2	43	...	
345	Wilton, Monroe Co.	6	8	2	16	16	16	2	2	35	4	
346	Winneconne, Winnebago Co.....	6	7	1	22	202	224	3	3	192	3	
347	Withee, Clark Co.	1	2	12	12	12	12	2	2	70	...	
348	Wittenberg, Shawano Co.....	5	7	25	25	25	25	2	2	150	4	
349	Wonewoc, Juneau Co.	3	3	1	6	6	6	1	1	20	2	
350	Woodville, St. Croix Co.....	1	2	3	3	3	3	1	1	10	1	

Total number of establishments	4,237
Total number of buildings under three stories	10,839
Total number of buildings three or more stories	1,694
Number of male employees	171,308
Number of female employees	28,616
Total number of employees	199,924
Total number of employees under 16 years of age.....	7,313
Total number of boilers	4,467
Total horse power	445,255
Total number of establishments having other power.....	1,334

The totals obtained in the foregoing tables are analyzed in Tables III-VII, following. It should be noted at this point, however, that the number of children under sixteen years of age, 7,313, is not in addition to the total number of male and female employees just preceding, 199,924, but is included in the latter number.

Tables III, IV and V present facts relating to the 12,531 buildings used by the various establishments:

TABLE III—NUMBER OF BUILDINGS INSPECTED AND AVERAGE TO EACH ESTABLISHMENT.

Classification.	Number of establishments inspected.	Buildings.		
		Number.	Per cent.	Average No. per establishment.
In Milwaukee	840	2,631	21.0	3.1
Outside Milwaukee	3,397	9,900	79.0	2.9
Total	4,237	12,531	100.0	3.0

TABLE IV—NUMBER AND KIND OF BUILDINGS.

Classification.	In Milwaukee.		Outside Milwaukee.		In state.	
	Number	Per cent.	Number.	Per cent.	Number.	Per cent.
Wooden buildings:						
One story	651	65.1	3,636	67.0	4,287	66.7
Two stories	206	29.6	1,400	25.8	1,696	26.4
Three stories	42	4.2	294	5.5	336	5.2
Four stories	6	0.6	62	1.1	68	1.1
Five stories	5	0.5	17	0.3	22	.3
Six stories			17	0.3	17	.3
Seven stories			1	0.0	1	0.0
Eight stories			1	0.0	1	0.0
Total	1,000	100.0	5,428	100.0	6,428	100.0
Brick buildings:						
One story	540	37.0	2,131	58.5	2,671	52.3
Two stories	337	25.2	987	27.1	1,354	26.5
Three stories	214	14.7	362	9.9	576	11.3
Four stories	162	11.1	125	3.3	287	5.6
Five stories	100	6.9	26	.8	126	2.5
Six stories	47	3.2	13	.4	60	1.2
Seven stories	24	1.6	1	0.0	25	0.5
Eight stories	3	.2			3	0.1
Nine stories	2	.1			2	0.0
Total	1,459	100.0	3,645	100.0	5,104	100.0

TABLE IV—NUMBER AND KIND OF BUILDINGS—Continued.

Classification.	In Milwaukee.		Outside Milwaukee.		In state.	
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
Iron and steel buildings:						
One story	79	54.5	332	62.5	411	60.8
Two stories	18	12.4	136	25.6	154	22.7
Three stories	11	7.6	37	7.0	48	7.1
Four stories	5	3.4	15	2.8	20	3.0
Five stories	2	1.4	4	.8	6	.9
Six stories	8	5.5	4	.8	12	1.8
Seven stories	10	6.9	.....	.....	10	1.5
Eight stories	6	4.1	.....	.....	6	.9
Nine stories	6	4.2	3	.5	9	1.3
Total	145	100.0	531	100.0	676	100.0
Stone buildings:						
One story	14	51.9	173	58.1	187	57.5
Two stories	1	3.7	78	26.2	79	24.3
Three stories	2	7.4	38	12.7	40	12.4
Four stories	7	25.9	6	2.0	13	4.0
Five stories	1	3.7	.....	.....	1	.3
Six stories	2	7.4	3	1.0	5	1.5
Total	27	100.0	298	100.0	325	100.0
All buildings:						
One story	1,234	48.8	6,272	63.3	7,556	60.3
Two stories	632	25.9	2,601	26.3	3,233	26.2
Three stories	269	10.2	731	7.4	1,000	8.0
Four stories	150	6.8	208	2.1	388	3.1
Five stories	108	4.1	47	.5	155	1.2
Six stories	57	2.2	37	.4	94	.7
Seven stories	34	1.3	2	.0	33	.3
Eight stories	9	.4	1	.0	10	.1
Nine stories	8	.3	3	.0	11	.1
Total	2,631	100.0	9,902	100.0	12,533	100.0
Total number and percentage of each kind:						
Wooden buildings	1,000	38.0	5,428	54.8	6,428	51.2
Brick buildings	1,459	55.5	3,645	36.8	5,104	40.8
Iron and steel buildings..	145	5.5	531	5.4	676	5.4
Stone buildings	27	1.0	298	3.0	325	2.6
Total	2,631	100.0	9,902	100.0	12,533	100.0

TABLE V—RESPECTIVE PROPORTION OF BUILDINGS IN MILWAUKEE AND OUTSIDE THAT CITY, WHEN CLASSIFIED AS TO KIND AND HIGHT.

Classification.	Number of buildings			Per cent		
	In Mil. waukee.	Outside Mil-waukee.	In the state.	In Mil-waukee.	Outside Mil-waukee.	In the state.
Kind:						
Wooden	1,000	5,428	6,428	15.6	34.4	100.0
Brick	1,459	3,645	5,104	28.6	71.4	100.0
Iron and steel	145	531	376	21.4	73.6	100.0
Stone	27	228	325	8.3	91.7	100.0
Total	2,631	9,902	12,533	21.0	79.0	100.0
Hight:						
One story	1,284	6,272	7,556	17.0	33.0	100.0
Two stories	682	2,601	3,283	20.8	79.2	100.0
Three stories	269	731	1,000	26.9	73.1	100.0
Four stories	130	208	338	46.4	53.6	100.0
Five stories	108	47	155	69.7	30.3	100.0
Six stories	57	37	94	60.6	39.4	100.0
Seven stories	34	2	36	94.4	5.6	100.0
Eight stories	9	1	10	90.0	10.0	100.0
Nine stories	8	3	11	72.7	27.3	100.0
Total	2,631	9,902	12,533	21.0	79.0	100.0

From Tables III-V it is seen that about one-fourth of the establishments inspected are in Milwaukee. There is an average of three buildings to each establishment, both in Milwaukee and outside that city. About two-thirds of all wooden buildings, and from one-half to three-fifths of all others, are but one story in hight. Over half of all buildings are of wood, about two-fifths of brick, and the others of iron, steel, or stone. Milwaukee has nearly 29 per cent of all the brick buildings inspected, but a considerably smaller percentage of each of the other kinds. It has a majority of all the buildings five or more stories in hight, but less than half of all buildings of four stories or less.

CLASSIFICATION OF EMPLOYEES ACCORDING TO SEX AND AGE.

Classification.	In Milwaukee.		Outside Milwaukee.		Total in state.	
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
Male persons employed	55,737	83.9	115,571	86.6	171,308	85.7
Female persons employed ..	10,665	16.1	17,951	13.4	28,616	14.3
All persons employed.	66,402	100.0	133,522	100.0	199,924	100.0
Children of 14 or 15 years ..	3,827	5.8	3,330	2.5	7,157	3.6
Children under 14 years	6	0.0	150	0.1	156	0.1
All children under 16 years ..	3,833	5.8	3,480	2.6	7,313	3.7
All persons over 16 years ..	62,569	94.2	130,042	97.4	192,611	96.3
All employees (as above)	66,402	100.0	133,522	100.0	199,924	100.0

TABLE VII.—RESPECTIVE PROPORTION OF EMPLOYEES IN MILWAUKEE AND OUTSIDE THAT CITY, WHEN CLASSIFIED AS TO SEX AND AGE.

Classification.	Number.			Per cent.		
	In Milwaukee.	Outside Milwaukee.	In state.	In Milwaukee.	Outside Milwaukee.	In state.
Male persons employed	55,737	115,571	171,308	32.5	67.5	100.0
Female persons employed ..	10,665	17,951	28,616	37.3	62.7	100.0
All persons employed.	66,402	133,522	199,924	33.2	66.8	100.0
Children of 14 or 15 years ..	3,827	3,330	7,157	53.5	46.5	100.0
Children under 14 years	6	150	156	3.8	96.2	100.0
All children under 16 years ..	3,833	3,480	7,313	52.4	47.6	100.0
All persons over 16 years ..	62,569	130,042	192,611	32.5	67.5	100.0
All employees (as above)	66,402	133,522	199,924	33.2	66.8	100.0

According to Tables VI and VII, about 86 per cent of all employees in the establishments inspected are males, and 14 per cent females. About 96½ per cent of all employees are over sixteen years of age. Of children under sixteen years, all but 156 were over 14. All under 14 were dismissed. About one third of all male operatives and three-eighths of all females, are employed in Milwaukee. Of children less than sixteen years of age, over half are employed in Milwaukee.

TABLE VIII—CLASSIFICATION OF ESTABLISHMENTS ACCORDING TO MANNER AND FREQUENCY OF MAKING PAYMENT OF WAGES.

Classification.	In Milwaukee.		Outside Milwaukee.		In state.	
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
Manner—						
Cash	592	70.5	2,183	64.3	2,775	65.5
Checks	237	27.0	1,075	31.6	1,302	30.7
Both	16	1.9	39	1.2	55	1.3
Otherwise, or not reporting	5	.6	100	2.9	105	2.5
Total	840	100.0	3,397	100.0	4,237	100.0
Frequency—						
Weekly	582	69.3	1,771	52.1	2,353	55.5
Semi-monthly	222	26.4	533	15.7	754	17.8
Monthly	30	3.6	995	29.3	1,025	24.2
Not reporting	6	.7	99	2.9	105	2.5
Total	840	100.0	3,397	100.0	4,237	100.0

Table VIII shows that nearly two-thirds of all establishments inspected pay wages in cash, and about 31 per cent by check. Over half pay wages weekly; about a fourth, monthly; and over a sixth, semi-monthly.

TABLE IX—CLASSIFICATION OF EMPLOYEES ACCORDING TO HOURS OF LABOR DAILY.

Classification,	In Milwaukee.		Outside Milwaukee.		Total in state.	
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
Persons employed—						
8 hours per day.....	6,953	10.5	1,497	1.1	8,450	4.2
8½ hours per day.....	1,069	1.5	.....	.....	1,069	0.5
9 hours per day.....	6,313	9.5	6,739	5.4	13,052	6.6
9½ hours per day.....	5,982	9.0	42	0.0	6,024	3.0
10 hours per day.....	42,215	63.6	116,096	86.9	158,311	79.2
11 hours per day.....	2,605	3.9	1,451	1.1	4,056	2.0
12 hours per day.....	1,325	2.0	7,336	5.5	8,661	4.3
Irregular hours .....	.....	.....	361	0.0	361	0.2
Total	63,402	100.0	133,522	100.0	199,924	100.0

From the above table it is seen that nearly four-fifths of all employees work ten hours per day. In Milwaukee, however, the proportion working ten hours is much smaller—less than two-thirds. In that city nearly 7,000 persons work 8 hours per day; over 6,000 persons, 9 hours; and about 6,000, 9½ hours.

TABLE X—CLASSIFICATION OF ACCIDENTS TO EMPLOYEES.

Classification.	In Milwaukee		Outside Milwaukee.		Total in state.	
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
Fatal	15	0.7	46	3.4	61	1.8
Temporary injury	1,957	98.6	1,224	89.8	3,181	95.0
Permanent injury	13	0.7	92	6.8	105	3.2
Total	1,985	100.0	1,362	100.0	3,347	100.0
To children under 16 years	30	4.5	6	.4	96	2.9

According to Table X, 95 per cent of all injuries suffered by employees during the period covered by this report resulted in only temporary disability. In Milwaukee over 98 per cent of the injuries received were temporary, while for the remainder of the state the proportion was about 90 per cent. For the whole state, nearly 2 per cent of all accidents resulted fatally, and over 3 per cent in permanent injury. Nearly 3 per cent of the accidents befell children of less than sixteen years of age.

TABLE XI—CLASSIFICATION OF BOILERS ACCORDING TO INSURANCE AND INSPECTION.

Classification.	In Milwaukee.		Outside Milwaukee.		Total in state.	
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
Insured and inspected.....	728	84.5	2,323	64.4	3,051	68.3
Inspected but not insured..	15	1.7	53	1.5	68	1.5
Total number inspected	743	86.2	2,376	65.9	3,119	69.8
Not inspected	119	13.8	1,229	34.1	1,348	30.2
Total	862	100.0	3,605	100.0	4,467	100.0

As is seen in Table XI, 68 per cent of all boilers in the state were found to be insured. These are inspected by the insurance companies at regular intervals, usually every three months. Somewhat less than 2 per cent of all are inspected regularly although not insured. About 30 per cent of all are never inspected, or but at irregular intervals. This state does not provide for an official Boiler Inspector.

TABLE XII—NUMBER AND HORSE POWER OF BOILERS.

Classification.	Number of establishments using steam power.	Boilers.		Horse power.			
		Number.	Average no. per estab.	Number.	Per cent.	Average no. per boiler	Average no. per estab.
In Milwaukee	373	862	2.3	110,138	24.7	127.8	205.3
Outside Milwaukee	1,789	3,605	2.0	335,117	75.3	93.0	186.5
Total	2,159	4,467	2.1	445,255	100.0	99.6	206.2

From Table XII it is seen that the number of boilers averages 2 for each establishment using steam power. One fourth of all horse power produced by steam is used in Milwaukee. The average horse power of all boilers is nearly 100, and the average number of horse power used by each establishment, 206.

TABLE XIII—NUMBER AND EXPERIENCE OF ENGINEERS.

Classification.	In Milwaukee.	Outside Milwaukee.	In state.
Number of engineers reported	364	1,569	1,933
Average number of years' experience	18	14	15
Average number of years in present service	7	6	6

The average number of years' experience of the engineers reported is seen to be 15 years; the average time employed in the present position, 6 years.

TABLE XIV—KIND OF POWER USED.

Classification.	In Milwaukee.		Outside Milwaukee.		In state.	
	Number	Per cent.	Number	Per cent.	Number	Per cent.
Establishments using						
Steam power	373	44.4	1,786	52.6	2,159	51.0
Electric power	203	24.2	404	11.9	307	14.3
Water power			226	6.6	226	5.3
Gas power	158	18.8	634	18.7	792	18.7
Hand power	23	2.7	173	5.1	196	4.6
Other power	79	9.4	34	1.0	113	2.7
No power	4	.5	140	4.1	144	3.4
Total	840	100.0	3,397	100.0	4,237	100.0

According to Table XIV, over half of all establishments inspected use steam power. In Milwaukee, electricity ranks second as a motive power; but outside that city, and for the state as a whole, gas is second.

TABLE XV—NUMBER OF ESTABLISHMENTS HAVING COMMUNICATION BETWEEN WORK ROOMS AND ENGINE OR POWER ROOM.

Classification.	Having communication.		Without communication.		Total.	
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
In Milwaukee	207	23.0	633	19.0	840	19.8
Outside Milwaukee	693	77.0	2,704	81.0	3,397	80.2
Total in state	900	100.0	3,337	100.0	4,237	100.0

TABLE XVI—KIND OF COMMUNICATION.

Classification.	In Milwaukee.		Outside Milwaukee.		Total.	
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
Electric bells	107	51.7	287	41.4	394	43.8
Telephones	56	27.5	17	2.5	73	8.1
Speaking tubes	3	1.5	13	1.9	16	1.8
Whistles	12	5.8	352	60.8	364	40.4
Other means	29	14.0	24	3.4	53	5.9
Total	207	100.0	693	100.0	900	100.0

From Tables XV and XVI it is seen that of the 4,237 establishments inspected only 900 had means of communication between work-rooms and the power room. The law provides that the inspectors may require the installation of speaking tubes or electric bells whenever they may deem such means of communication necessary, in establishments using steam power. Of the 2,159 establishments in which steam power is used, means of communication were ordered for all in which the work-rooms were so separated from the power room as to make some such means needful. Of the means already in use, electric bells were found to be the most common.

TABLE XVII—FIRE ESCAPES AND BALCONIES.

Classification.	Fire escapes.		Balconies attached.	
	Number.	Per cent.	Number.	Per cent.
In Milwaukee	605	64.2	572	72.7
Outside Milwaukee	237	35.8	215	27.3
Total	942	100.0	787	100.0

According to Table XVII, 942 fire escapes were inspected, about two-thirds of which are in Milwaukee. All but 33 of the fire escapes in that city were found to be provided with balconies as required by law. Outside of that city, however, only two-thirds of the fire escapes had balconies attached. Fire escapes were ordered for all buildings three or more stories high, in which 25 or more persons were employed, if such means of escape were not already provided.

TABLE XVIII—NUMBER OF BUILDINGS HAVING STANDPIPES, HOSE CONNECTIONS, AND AUTOMATIC SPRINKLERS.

Classification.	Outside pipes.		Inside pipes.		Hose connections.		Automatic sprinklers.	
	No.	Per ct.	No.	Per ct.	No.	Per ct.	No.	Per ct.
In Milwaukee	485	61.4	195	21.7	598	49.3	292	59.0
Outside Milwaukee	305	38.6	704	78.3	616	50.7	203	41.0
Total in state....	790	100.0	899	100.0	1,214	100.0	495	100.0

All buildings requiring fire escapes must have a wrought iron standpipe attached thereto except such structures as are equipped with automatic sprinklers. A large number of establishments have provided their buildings with standpipes even when no fire escape was required. It will be seen from Table XVIII that the majority of outside standpipes were found in Milwaukee, while the greater number of inside pipes are outside that city.

TABLE XIX—NUMBER OF STAIRWAYS AND OTHER MEANS OF DESCENT FROM STORIES ABOVE GROUND FLOOR.

Classification.	In Milwaukee.		Outside Milwaukee.		Total in state.	
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
Inside stairways	1,810	60.7	716	55.8	2,526	62.0
Outside stairways	304	10.2	98	9.0	402	9.9
Tramways	39	1.3	18	1.7	57	1.4
Elevators	809	27.1	250	23.0	1,059	26.0
Other means	21	0.7	6	0.5	27	0.7
Total	2,983	100.0	1,088	100.0	4,071	100.0

As is seen from Table XIX, inside stairways form the principal means of descent from upper to lower stories of the establishments inspected. Elevators constitute about one-fourth of the total, the proportion being higher in Milwaukee than outside that city.

TABLE XX—KIND OF DOORS USED ON ELEVATORS.

Classification.	In Milwaukee.		Outside Milwaukee.		Total in state.	
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
Automatic doors	225	27.8	331	34.1	556	31.3
Bars	201	24.9	310	32.0	511	28.8
Lifting gates	89	11.0	26	2.7	115	6.5
Swinging doors	153	18.9	173	17.9	326	18.2
Sliding doors	141	17.4	139	13.3	270	15.2
Total	809	100.0	969	100.0	1,773	100.0

According to Table XX, of the means used to guard an elevator shaft automatic doors are the kind in most general use.

TABLE XXI—NUMBER OF EMERY AND POLISHING WHEELS, AND NUMBER OF SUCH WHEELS HAVING SUCTION DEVICES AND GUARDS.

Classification.	Wheels.		With suction devices.		With guards.	
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
In Milwaukee	874	30.9	157	23.7	133	23.7
Outside Milwaukee	1,951	69.1	535	77.3	427	76.3
Total in state	2,825	100.0	692	100.0	560	100.0

The law requires that polishing wheels shall be provided with such guards and suction devices as shall properly protect the operator from the particles of dust produced by the use of the wheels. From Table XXI it is apparent that less than a fifth of the wheels inspected in Milwaukee were so provided, while the proportion was but slightly larger outside that city. A large number of the emery wheels inspected, however, are used only for grinding, while many others could not be provided with the required device without impairing the use of the wheels. In such cases the wheels are exempt from the provisions of the law.

TABLE XXII—NUMBER OF VATS AND PANS HAVING GUARDS, AND NUMBER NOT SO PROVIDED.

Vats and pans.	In Milwaukee.		Outside Milwaukee.		Total in state.	
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
Guarded	827	79.5	1,713	83.4	2,540	82.1
Not guarded	213	20.5	340	16.6	553	17.9
Total	1,040	100.0	2,053	100.0	3,093	100.0

The law stipulates that stationary vats, pans, and other vessels into which molten metal or hot liquids are poured, or in which they are kept, shall be surrounded with proper safeguards for the protection of employees. According to Table XXII, over four-fifths of all vats and pans inspected were found to be properly guarded. Guards were ordered for all vessels not already so provided.

TABLE XXIII—NUMBER OF DOORS AND OTHER EXITS FROM FIRST FLOOR AND BASEMENT.

Exits.	In Milwaukee.		Outside Milwaukee.		Total in state.	
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
From first floor	7,166	98.1	24,293	97.4	31,459	96.8
From basement	529	6.9	512	2.6	1,041	3.2
Total number	7,395	100.0	24,805	100.0	32,500	100.0

It is evident from Table XXIII that the exit from a large majority of the buildings inspected is from the first floor. The exit is from the basement in less than 7 per cent of the buildings in Milwaukee, and in only 2½ per cent of the buildings outside that city.

TABLE XXIV—HOW DOORS OPEN OR SWING.

Classification.	In Milwaukee.		Outside Milwaukee.		In state.	
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
Doors swinging in	3,811	49.5	12,165	49.0	15,976	49.2
Doors swinging out	1,672	21.7	5,130	20.7	6,802	20.9
Doors swinging both ways	11	0.2	187	0.8	193	0.6
Doors sliding	1,874	24.4	6,553	26.4	8,427	25.9
Doors lifting	249	3.2	227	1.3	576	1.8
Open buildings	78	1.0	443	1.8	521	1.6
Total	7,695	100.0	24,805	100.0	32,500	100.0

It is apparent from Table XXIV that only a fifth of the doors of the establishments inspected were found to swing outward. The law stipulates that doors of factories etc., shall swing outward, unless in the judgment of the inspector this shall not be necessary. Wherever it was deemed advisable by the inspectors, orders were issued for changing the doors to swing outward.

TABLE XXV—NUMBER OF BUILDINGS HAVING MECHANICAL VENTILATION, AND NUMBER AND CONDITION OF WATER CLOSETS.

Classification.	Mechanical ventilation.		Closets.		Closets in bad condition.	
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
In Milwaukee	115	90.6	3,497	34.5	262	75.7
Outside Milwaukee	12	9.4	6,639	65.5	84	24.3
Total	127	100.0	10,136	100.0	346	100.0

The law requires that a fan or similar mechanical device shall be provided for carrying away dust and other impurities in every factory in which any process is carried on by which dust or fumes are produced. Table XXV shows that 127 establishments were found to be provided with some mechanical means of ventilation. Nearly all were in Milwaukee. It was found necessary to order the installation of such means in a large number of establishments, as is seen in Table XXVII. Of 10,136 closets inspected, 346 were found in bad condition and were ordered improved.

TABLE XXVI—NUMBER OF BUILDINGS PROVIDED WITH SEATS FOR FEMALES.

Classification.	Buildings.	
	Number.	Per cent.
In Milwaukee	260	52.3
Outside Milwaukee	237	47.7
Total	497	100.0

The law requires that every establishment employing female help shall provide suitable seats for the females employed, and shall permit the use of such seats by them when they are not necessarily engaged in the active duties for which they are employed. According to the table, 497 buildings were found to be provided with seats in accordance with the law. Orders were issued in 10 other establishments, to provide the required seats.

TABLE XXVII—ORDERS ISSUED AND RECOMMENDATIONS MADE IN CONNECTION WITH INSPECTION OF THE FACTORIES AND WORKSHOPS INCLUDED IN THE FIRST TABLE.

Classification.	In Milwaukee.		Outside Milwaukee.		Total in state.	
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
Relating to—						
Hours of labor			9	0.3	9	0.1
Children under 14 years	57	1.4	84	2.3	141	1.8
Children of 14 or 15 years	254	6.2	422	11.6	676	8.8
Wages	4	0.1			4	0.1
Boilers			26	0.7	26	0.4
Buildings	187	4.6	123	3.4	310	4.0
Fire escapes or stand pipes	17	0.4	64	1.8	81	1.1
Stairways	45	1.1	68	1.9	113	1.5
Elevators	65	1.6	108	2.9	173	2.3
Means of communication	13	0.3	60	1.7	73	0.9
Machinery	2,412	59.1	1,612	44.5	4,024	52.2
Polishing wheels	307	7.5	581	16.0	888	11.5
Vats and pans	8	0.2	19	0.5	27	0.3
Doors	39	1.0	40	1.1	79	1.0
Ventilation and sanitation	582	14.2	360	9.9	942	12.1
Seats for female employees			10	0.3	10	0.1
Other orders	93	2.3	39	1.1	132	1.7
Total	4,053	100.0	3,625	100.0	7,708	100.0

According to Table XXVII, 7708 orders were issued during the period covered by this report, over half of which were issued to establishments in Milwaukee. The failure to guard machinery properly was the occasion for the issuance of more than half of the orders. Orders pertaining to ventilation and sanitation were second in importance in Milwaukee, while outside of that city orders for the guarding of polishing wheels ranked second.

A comparison between the orders issued during the last biennial period and during the preceding period is made in the table found on page 1307.

INSPECTION OF CIGAR FACTORIES, MERCANTILE ESTABLISHMENTS, AND PUBLIC BUILDINGS.

In addition to the inspection of factories and workshops, the law requires inspection of a large number of other places of employment or entertainment. Among the latter are: cigar factories, mercantile establishments, armories, bowling alleys, schools, churches, hotels, hospitals, etc. Owing to there being a much greater necessity for the frequent inspection of factories where violations of the law are most frequent and the inducement for violations the strongest, and also because many of the other places required to be inspected are situated in villages and towns not frequently visited by inspectors because no factories are located there, the proportion of such places inspected is not so large as the proportion of the factories of the state inspected.

The different industries and factories of the state are capable of definite classification and the inspection returns can be compiled, admitting of generalizations; but this is not true of the other places inspected. Nearly all of such establishments and institutions are housed in a single building and in the majority of cases the building is not a large one, thus offering much less danger to the occupants and also exempting the structures from the application of statutes which are most important in respect to larger buildings. Because of the great variety in size and nature of the buildings inspected no separate compilation of facts in regard to each class of buildings has been possible. But the following table contains a fair summary of the work done in connection with the inspection of all buildings of this general character.

PLACES INSPECTED AND ORDERS ISSUED.

Orders, recommendations, etc.	Number of orders issued in							Total.
	Amusements, dance halls, lodge halls, theaters.	Bowling alleys	Cigar factories.	Colleges, convents, schools.	Asylums, churches, hospitals.	Hotels, lodging houses.	Mercantile establishments.	
Children dismissed		3	47			2	164	216
Permits issued			31			1	15	47
Registers of children employed			12					12
Seats for women							46	46
Separate rooms for women			4					4
Hours of labor			3			1	15	19
Licenses issued			189					189
Licenses revoked			1					1
Buildings	17		5		4	4		30
Stairways	11		3	3	2	2	1	22
Elevators			1	1	2	7	2	19
Doors	41		5	7	40	36	20	149
Fire-escapes	48			37	26	162	4	277
Red lights	20					230		250
Hempen ropes						492		492
Stand pipes				1		10		11
Signs and notices	18			1	1	1,238		1,258
To vacate rooms			9					9
Sanitation and ventilation	5		127	27	1	5	20	194
Machinery				7	3	10		20
Signals						1		1
Other recommendations			1		21	1		23
Total orders, etc	160	3	438	84	106	2,202	296	3,289
Number of buildings inspected	184	74	1,025	138	69	275	228	1,966

Of the 1986 establishments inspected, over one-half were cigar factories. The largest number of orders issued, however, was in connection with the inspection of hotels and lodging-houses. It was found that a large number of these establishments were exceedingly delinquent in the matter of providing adequate fire protection for their guests, and the orders issued were in consequence, with but few exceptions, directed to the rectification of these conditions. In the case of mercantile establishments the majority of the orders issued were for the dismissal of children beneath the legal age.

PERMITS.

The Child Labor Law requires that before a child between the ages of fourteen and sixteen years may be employed at any gainful occupation at any place he must obtain from either an official of this Bureau or a duly authorized judge a written permit authorizing such employment. A child between the ages of twelve and fourteen years may, during the vacation of the public school of the town where the child resides, be employed in certain establishments and at certain occupations, provided he has first secured a vacation permit entitling him to be so employed.

During the biennial period ending October 31st, 1906, a total of 16,458 permits were granted in this state. Of this number, 11,958 were issued by the commissioner or the factory inspectors, and 4,500 by judges in various counties of the state. Attention has already been called to the fact that the number of permits granted is not an exact indication of the number of children actually employed. A number who obtained permits failed to secure work. Many became sixteen years of age shortly after obtaining their permits, and so passed out of the permit class. In the case of a large number of children, a permit was granted for only a year and had therefore to be renewed upon its expiration if the child was still under sixteen. Evidently therefore the number of children actually at work at any given time during the two-year period must have been very much less than the number of permits issued during the whole period.

The following tables present certain facts relative to the permits granted and to the children who secured them. By reason of a misunderstanding in regard to the information desired by the Bureau, all but one of the judges who issued permits failed to report to this office as to the persons with whom each child lived, or as to the previous school attendance of each. Tables II-VII are therefore based upon facts ascertained in connection with the granting of only 11,993 permits, which were issued by officials of this department and by one county judge who submitted the required data. It is probable, however, that the percentages so found will not differ materially from those which result from a compilation of the data relating to the entire number of permits granted.

TABLE I—NUMBER AND PERCENTAGE OF MALE AND OF FEMALE CHILDREN WHO RECEIVED REGULAR OR VACATION PERMITS.

Classification.	Regular permits.		Vacation permits.		Total.	
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
Male	10,052	63.8	576	81.3	10,628	64.6
Female	5,697	35.2	133	18.7	5,830	35.4
Total	15,749	100.0	709	100.0	16,458	100.0

From Table I it is seen that about five-eighths of the regular permits granted were issued to male children, and but three-eighths to females. Of the children between the ages of twelve and fourteen, who sought work only during the school vacation, over four-fifths were males.

TABLE II—CHILDREN RECEIVING REGULAR OR VACATION PERMITS CLASSIFIED AS TO THE PERSONS WITH WHOM THEY RESIDE.

Residing with—	Regular permits.		Vacation permits.		Total.	
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
Parents	9,845	85.2	339	78.3	10,184	84.9
Father	213	1.9	10	2.3	228	1.9
Mother	1,132	9.8	75	17.3	1,207	10.1
Other relative	303	2.6	8	1.9	316	2.6
Guardian	9	0.1	.....	.....	9	0.1
Other person	48	0.4	1	0.2	49	0.4
Total	11,560	100.0	433	100.0	11,993	100.0

Table II shows that five-sixths of all children that obtained permits reside with their parents, about one tenth with their mother, and the others with their father, guardian or other person. It appears exceedingly likely, therefore, that it was in only a small percentage of cases that the child obtaining the permit was the chief means of support of the family of which he was a member.

TABLE III—CHILDREN RECEIVING REGULAR OR VACATION PERMITS CLASSIFIED AS TO NUMBER OF YEARS' PREVIOUS PUBLIC SCHOOL ATTENDANCE.

Public school attendance	Regular permits.		Vacation permits.		Total.	
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
One year	9	0.2	.....	.....	9	0.2
Two years	17	0.3	4	1.4	21	0.4
Three years	17	0.3	.....	.....	17	0.3
Four years	67	1.3	5	1.7	72	1.3
Five years	223	4.3	30	10.6	253	4.7
Six years	562	10.9	53	18.7	615	11.3
Seven years	1,375	26.7	110	23.7	1,485	27.3
Eight years	1,786	34.6	68	24.0	1,854	34.1
Nine years	844	16.4	14	4.9	358	15.8
Ten years	250	5.0	.....	.....	256	4.7
Total	5,156	100.0	284	100.0	5,440	100.0

According to Table III, permits were granted to 5,440 children who had previously attended a public school. Seven or eight years was the average period of such attendance. Ninety-nine per cent of all had attended school for four years or longer. Twenty per cent had attended for either nine or ten years.

TABLE IV—CHILDREN RECEIVING REGULAR OR VACATION PERMITS CLASSIFIED AS TO NUMBER OF YEARS' PREVIOUS PAROCHIAL SCHOOL ATTENDANCE.

Parochial school attendance.	Regular permits.		Vacation permits.		Total.	
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
One year	8	0.2	.....	.....	8	0.2
Two years	24	0.5	.....	.....	24	0.5
Three years	75	1.7	1	1.0	76	1.7
Four years	191	4.4	9	8.6	200	4.5
Five years	528	12.2	14	13.3	542	12.3
Six years	698	20.8	33	31.4	731	21.0
Seven years	1,455	33.9	39	37.1	1,504	34.0
Eight years	876	20.3	9	8.6	885	20.0
Nine years	231	5.3	.....	.....	231	5.2
Ten years	24	0.5	.....	.....	24	0.6
Total	4,320	100.0	105	100.0	4,425	100.0

From Table IV it is seen that 4,425 of the children that secured permits had previously attended parochial schools. The average length of such attendance was between six and seven years. Only six per cent had attended school for more than eight years.

TABLE V—CHILDREN RECEIVING REGULAR OR VACATION PERMITS CLASSIFIED AS TO NUMBER OF YEARS THEY HAD PREVIOUSLY ATTENDED BOTH PUBLIC AND PAROCHIAL SCHOOLS.

Attendance at both public and parochial schools.	Regular permits.		Vacation permits.		Total.	
	No.	Per cent.	No.	Per cent.	No.	Per cent.
One year						
Two years	3	0.2			3	0.2
Three years	3	0.2			3	0.2
Four years	13	1.0	1	2.3	19	1.0
Five years	73	3.8	5	11.4	73	4.0
Six years	233	12.1	9	20.4	242	12.3
Seven years	584	30.4	19	43.2	603	30.7
Eight years	636	33.2	9	20.4	645	32.8
Nine	292	15.2	1	2.3	293	14.9
Ten years	76	3.9			76	3.9
Total	1,918	100.0	44	100.0	1,962	100.0

Of all children that obtained permits, 1,962 had attended both public and parochial schools. The average length of such attendance was from seven to eight years. All but one and one half per cent had attended school five years or more, while about nineteen per cent had attended for more than eight years.

TABLE VI—CHILDREN RECEIVING REGULAR OR VACATION PERMITS CLASSIFIED AS TO NUMBER OF YEARS' PREVIOUS SCHOOL ATTENDANCE.

School attendance.	Regular permits.		Vacation permits.		Total.	
	No.	Per cent.	No.	Per cent.	No.	Per cent.
With no school attendance.	36	0.3			36	0.3
One year	23	0.2			23	0.2
Two years	54	0.5	4	0.9	58	0.5
Three years	104	0.9	1	0.2	105	0.9
Four years	290	2.5	15	3.5	305	2.5
Five years	845	7.3	40	11.3	894	7.4
Six years	1,719	14.9	95	21.8	1,814	15.1
Seven years	2,445	20.8	163	38.9	2,613	20.2
Eight years	3,318	28.7	86	19.9	3,404	28.4
Nine years	1,369	11.8	15	3.5	1,384	11.5
Ten years	357	3.1			357	3.0
Total	11,530	100.0	433	100.0	11,993	100.0

Table VI is in part a summary of Tables III-V, but includes also those children who attended school in a foreign country and those who had attended no school whatever. The average length

of attendance is again seen to have been between seven and eight years. Only two per cent had had less than four years' experience in school.

TABLE VII—SUMMARY. CHILDREN RECEIVING REGULAR OR VACATION PERMITS CLASSIFIED AS TO KIND OF SCHOOL ATTENDED.

Children having attended—	Regular permits.		Vacation permits.		Total.	
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
Public school	5,156	44.6	284	65.6	5,440	45.4
Parochial school	4,320	37.4	105	24.3	4,425	36.9
Both public and parochial.	1,918	16.6	44	10.3	1,962	16.3
Foreign school	130	1.1	.....	.....	130	1.1
No school	36	0.3	.....	.....	36	0.3
Total	11,560	100.0	433	100.0	11,993	100.0

From Table VII it is seen that forty-five per cent of all children who were granted permits had attended public schools only; thirty-seven per cent., parochial schools only; and sixteen per cent., both public and parochial schools. One per cent of those who obtained permits had attended school in a foreign country. Less than a third of one per cent had attended no school. In the last report of this Bureau attention was called to the fact that a larger percentage of the children who applied for permits had attended parochial schools than had attended public schools although only a fourth of the children of school age in Wisconsin were in parochial schools. The report of the State Superintendent for the years 1904-1906 shows that for those years the number of children who had attended parochial schools was about one-fourth the number of those who had attended public schools. From the above table it is apparent that the number of permits granted to parochial school children is three-fourths the number issued to children who had attended public school. The percentage of permits granted to parochial school children is again somewhat higher, therefore, than would be expected from the proportion of such children in the state.

CONCLUSION.

Such part of the work of the factory inspectors as can be expressed in tabular form is summarized in the four tables following. For purposes of comparison, the tables include also a summary of the work performed during the eighteen months immediately preceding the period covered by this report.

TABLE I—INSPECTIONS MADE.

Classification of buildings and places inspected.	1903-1904.		1905-1906.	
	No. of inspections.	Per cent.	No. of inspections.	Per cent.
Factories and workshops	8,919	89.4	16,843	77.6
Cigar factories	408	4.1	2,511	11.6
Mercantile establishments	158	1.6	1,012	4.7
Bowling alleys	94	0.9	217	1.0
Hotels, lodging-houses, etc.	170	1.7	493	2.2
Colleges, convents, schools	36	0.4	220	1.0
Armories, theatres, public halls ..	25	0.2	301	1.4
Asylums, churches, hospitals	26	0.3	104	0.5
Other places	140	1.4	.....	.....
Total	9,976	100.0	21,701	100.0

From Table I it is seen that 21,701 inspections were made during the period of two years covered by this report. In the preceding period—of eighteen months—the number made was 9,976. A part of this increase is due to the fact that the Bureau had four more inspectors during ten months of the last biennial period than at any time previous. In each period over three-fourths of the inspections were of factories and workshops, the proportion of such inspections in the earlier period being nearly 90 per cent. Practically every factory was inspected twice during the later period. A large number were inspected as many as six times, inspections having been made as often as it was thought necessary. The number of establishments of each class inspected has been given in preceding tables, (pages 1284 and 1300).

FACTORY INSPECTION.

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TABLE II—ORDERS ISSUED AND SUGGESTIONS MADE.

Classification	1903-1904		1905-1906.	
	No.	Per cent	No.	Per cent
Orders or suggestions relating to—				
Hours of labor	73	0.7	28	0.3
Children under 14 years	600	5.7	357	3.3
Children of 14 or 15 years.....	454	4.2	688	6.4
Wages			4	0.0
Boilers	7	0.1	26	0.3
Buildings	188	1.7	340	3.2
Fire-escapes or standpipes	213	2.0	369	3.4
Hempen ropes, red lights, etc.			2,000	18.6
Stairways	114	1.1	135	1.3
Elevators	103	0.9	192	1.8
Means of communication	83	0.8	74	0.7
Machinery	3,276	30.7	4,044	37.6
Polishing wheels	317	3.0	838	8.2
Vats and pans	17	0.2	27	0.3
Doors	241	2.3	228	2.1
Ventilation and sanitation	1,304	12.2	1,136	10.5
Seats for female employees	215	2.0	56	0.5
Other matters	3,474	32.5	168	1.5
Total	10,679	100.0	10,760	100.0

The largest number of orders issued pertained to the proper guarding of machinery, as in the preceding period. A rigorous enforcement of the law requiring the use, in hotels and other public buildings, of red lights and other measures for protection in case of fire, led to the issuance of over 18 per cent of the orders. The next largest number, amounting to 10 per cent of the total, were directed toward the establishment of proper sanitary conditions. It is worthy of notice that the total number of orders issued, 10,760, was but slightly greater than the number issued during the eighteen months just preceding. It is of course evident that when the orders issued for any establishment have once been fully complied with, but few additional orders will have to be issued upon subsequent inspections.

TABLE III—OTHER DUTIES PERFORMED.

Classification.	1903-1904.		1905-1906.	
	Number.	Per cent.	Number.	Per cent.
Regular permits issued	9,994	88.8	11,528	93.4
Vacation permits issued	907	8.1	430	3.5
Licenses granted to cigar factories.....			112	0.9
Cigar factory licenses revoked.....			2	0.0
Licenses granted to sweat-shops.....	49	0.4		
Sweat-shop licenses revoked	9	0.1		
Prosecutions	157	1.4	64	0.5
Miscellaneous acts	135	1.2	203	1.7
Total	11,251	100.0	12,339	100.0

Table III summarizes the duties which were performed by the inspectors in addition to those included in Tables I and II. The granting of permits is seen to have constituted nearly 97 per cent of the total number of such acts. It should be noted however that a large part of the work performed by the inspectors is too varied to be classified in the form of statistical data. A part of such work consisted of the investigation of complaints alleging a violation of the child labor law; the enforcement by the inspectors, in their capacity as truancy officers, of the compulsory education law; assisting in the collection of statistics relating to the manufacturing and mining industries of the state, to municipal and contract labor, to labor unions, and to accidents occurring to employees; and the investigation of conditions affecting the health and general welfare of the working classes. Part IV of this report, The Housing Problem in Wisconsin, records the results of one such study. A considerable amount of time was spent also in attending to the correspondence involved in the work; in formulating orders to be issued; in listing places inspected; in conferences with manufacturers, merchants, owners of buildings, officials of the city departments of police, fire, health, education, and building inspection, and with representatives of various associations of workingmen; in filing the duplicates of permits issued, and compiling statistics from these; in tracing children who had been granted vacation permits and who were reported to be still working after the opening of school; and in visits to establishments for various purposes but not counted as inspections, as, e. g., to assist in locating a new fire-escape, to explain how to

guard certain machinery—especially new machinery—or to explain other changes in cases where the foreman or the company architect was absent when the inspection was made and the changes ordered.

TABLE IV—SUMMARY OF WORK PERFORMED BY INSPECTORS.

Classification.	No. in 1903-1904.	No. in 1905-1906.
Inspections made		
Orders issued	9,976	21,701
Other acts	10,679	10,760
	11,251	12,339
Total	31,906	44,800

Table IV summarizes the data contained in Tables I to III. A total of 44,800 acts were performed by the inspectors during the two years ending October 31st, 1906. The chief increase over the preceding period was in the number of inspections made.

In conclusion it may be said that the Bureau has found an increasing friendliness on the part of manufacturers and other employers in the state toward the officials of this department. It has been the aim of the Bureau to secure the enforcement of the factory laws in a manner that would cause as little annoyance to the employer as possible, while none the less effective in accomplishing the purposes expressed in the laws. It is believed that employers as a whole realize that a proper provision for the health and safety of their employees means ultimately the furtherance of their own interests. The co-operation of a large majority of them in the work carried on by the department, and the readiness with which suggestions and orders were complied with—only sixty-four prosecutions having been found necessary during the last two years—are taken as an expression of this attitude on their part. For the courtesies extended by them to officials of the department on various occasions the Bureau takes this opportunity of expressing its thanks.

BAKERY INSPECTION.

As was stated in the last report of this Bureau, the Legislature of 1903 passed a law providing for the sanitary regulation of bakeries and confectionery establishments. The enforcement of the provisions of this law was made the duty of this Bureau and its agents. The provisions of the law are given in detail in the report mentioned and need not be repeated here.

The facts ascertained by the bakery inspector in the course of his inspection, and the orders issued, are presented in tables of the same general form as those setting forth similar facts relating to the factories inspected. The explanation prefixed to that set of tables is therefore applicable to the following tables also. Additional comment is appended to the tables when considered necessary.

TABLE I—SHOWING NAME AND LOCATION OF BAKERIES AND CONFECTIONERIES INSPECTED, HOURS OF LABOR REQUIRED IN EACH ESTABLISHMENT, AND THE CLASSIFICATION OF EMPLOYEES AS TO AGE AND SEX.

Location and name of firm.	Hours of labor.	Employees.			Under 16 years of age.
		Male.	Female.	Total.	
Abbotsford, Clark Co.— Harrer, G.	10				
Algoma, Kewaunee Co.— Weber, Joseph	10				
Alma, Buffalo Co.— Ruben, M.	10				
Antigo, Langlade Co.— Du Bois & Co.	10		2	2	
Huebner, Paul	10		1	1	
Schlemmer, J.	10	5	2	7	
Smith & Co., Geo.	10	3	1	4	
Total		8	6	14	

TABLE I—BAKERIES AND CONFECTIONERIES INSPECTED—Continued.

Location and name of firm.	Hours of labor.	Employees.			
		Male.	Female.	Total.	Under 16 years of age.
Appleton, Outagamie Co.—					
Bilster, W. F.	12				
Doerfler, J.	15	1		1	
Gmeiner Bros.	14		2	2	
Holzer, Conrad	12	1		1	
Huckins Bros.	6				
Kalodes, A.	12		1	1	
Kohler, Peter	10				
Kutler, L. F.	10	4	2	6	
Leithen, W.	9				
Nichols, E. G.	6		1	1	
Pfefferle, A.	11	2		2	
Roberts, C.	12	2	1	3	
Stengel, Anton	12	2		2	
Total		12	7	19	
Ashland, Ashland Co.—					
De Muth, W. L.	10	2		2	
Johnson, Adolph	10	11		11	
Stevenson, John	10				
Wickland, Carl	12½	2		2	
Wikstrand, Olle	10	2	1	3	
Total		17	1	18	
Baraboo, Sauk Co.—					
Arndt, F. M.	10				
Bunn, J. C.	10				
Hein, Aug.	10	1	1	2	
Luethe Bros.	10	1		1	
Total		2	1	3	
Barron, Barron Co.—					
Benson, C. J.	10	1	2	3	
Hunt, W. C.	10		1	1	
Total		1	3	4	
Bayfield, Bayfield Co.—					
Flanders, O.	10				
Lambert, John	10				
Beaver Dam, Dodge Co.					
Brower, C. D.	6	1		1	
Knaak, J. B.	11	2	1	3	
Krueger, G.	10		1	1	
Newton, T.	10	2	1	3	
Total		5	3	8	
Beloit, Rock Co.—					
Corcoran, T. D. & Bro.	10	14	3	17	
Jobe, A.	4				
Kenzie, C. G.	10	10	2	12	
Rohner, A.	10				
Smiley, A. L.	10	6	2	8	
Total		30	7	37	
Berlin, Green Lake Co.—					
Boettge, C. M.	11	2		2	
Ludwig, Otto	11	1	1	2	
Rogers, G. A.	10	1		1	
Thomas & Maitland	10		2	2	
Total		4	3	7	

TABLE I—BAKERIES AND CONFECTIONERIES INSPECTED—Continued.

Location and name of firm.	Hours of labor.	Employees.			
		Male.	Female.	Total.	Under 16 years of age.
Birnamwood, Shawano Co.— Applebaker, Mrs. Mary	10				
Black River Falls, Jackson Co.— Kelley, Harry	10	1		1	
Krause, Wm.	10	1		1	
Total		2		2	
Bloomer, Chippewa Co.— Lea, C.	10	1		1	
Boscobel, Grant Co.— Oswald, C. A.	10	1	1	2	
Brillion, Calumet Co.— Neumann, W.	10				
Brodhead, Green Co.— Petrick, G. J.	8	3		3	
Rood, A. E.	10	3		3	
Total		6		6	
Burlington, Racine Co.— Ebbers Bros.	10		1	1	
Halberstadt, C.	10	1		1	
Rose, J. G.	10				
Total		1	1	2	
Cedarburg, Ozaukee Co.— Beer, Charles A.	11	2	1	3	
Herz, Jos.	12	2		2	
Sonders, G.	10				
Total		4	1	5	
Chetek, Barron Co.— Golden, C. N.	10				
Hewitt, George	8	1		1	
Total		1		1	
Chilton, Calumet Co.— Buhl, G.	10	1	1	2	
Chippewa Falls, Chippewa Co.— Dunn, J. E.	10	2	1	3	
Gagnon, W. E.†	8	1	1	2	
Hunt, F. R.	10		2	2	
McDonald, A.	10	1	5	6	
Success Store	10	1	1	2	
Total		5	10	15	
Clintonville, Waupaca Co.— Gebhardt, G.	10		1	1	
Sutherland, S. N.	10				
Total			1	1	
Columbus, Columbia Co.— Klatt, W. G.	10	2	1	3	

TABLE I—BAKERIES AND CONFECTIONERIES INSPECTED—Continued.

Location and name of firm.	Hours of labor.	Employees.			Under 16 years of age.
		Male.	Female.	Total.	
Crandon, Forest Co.—	10				
Day, C. H.					
Cuba, Grant Co.—	7	2		2	1
Byrne Bros.	10	1		1	
Carnielson, C. I.					
Total		3		3	1
Cudahy, Milwaukee Co.—	10	2		2	
Vogl, H.					
Cumberland, Barron Co.—	10	1	1	2	
Coleman, J. P.	10		1	1	
Hafslund, Gus.	10		1	1	
Poukey, Mrs. S.	10		1	1	
Woodcock, H.	10				
Total		1	3	4	
Darlington, Lafayette Co.—	10	1	1	2	
Harney & Martin	7	1		1	
Hocking, F. C.					
Total		2	1	3	
Delavan, Walworth Co.—	19	2	1	3	
Bailey, J. W.	19	3	2	5	
Schlada, C. F.					
Total		5	3	8	
DePere, Brown Co.—	2		1	1	
Canellakes, T.†	10				
De Johnge, C.	10				
La Count, Mrs. M.	11	1	1	2	
Sampier, W. H.	10				
Vander Brand, John	10	1		1	
Van De Walle, P.	11	1		1	
Wassingberg Bros.					
Total		3	2	5	
Dodgeville, Iowa Co.—	10				
Brenner, C. H.					
Eau Claire, Vilas Co.—	10				
Rautz, C. W.	10				
Roderick, Mrs. J.					
Eau Claire, Eau Claire Co.—	6	1	1	2	
Dookakos, Geo.†	10	10	17	27	
Meador, R. L. & Co.†	19	3	2	5	
Palace of Sweets*	11	8		8	
Smith Baking Co.	8	4	3	7	
Steady, M. B.†	10	3	1	4	1
Stensland, A.					
Total		29	24	53	1
Edgerton, Rock Co.—	10				
Leedle & Co.					
Elkhorn, Walworth Co.—	10	1		1	
Robinson, J. H. & Son					

TABLE 1—BAKERIES AND CONFECTIONERIES INSPECTED--Continued.

Location and name of firm.	Hours of labor	Employees.			
		Male	Female.	Total	Under 16 years of age.
Ellsworth, Pierce Co.—					
Miller, J. J.		1		1	
Evansville, Rock Co.—					
Eastman, J. O.	10				
Heffel, W. H.	10		1	1	
Story, C. E.	8				
Tullar, W. D.	10				
Fennimore, Grant Co.—					
Duster, John	10				
Florence, Florence Co.—					
Hillberg, G. O.	10				
Fond du Lac, Fond du Lac Co.—					
Allen, Mrs. W. H.	10		1	1	
Arvretz, J.†	5	2		2	
Boex-Holman Co.†	10	20	62	82	7
Buxa, N. W.	10	2	1	3	
Columbia Candy Kitchen	10	2	2	4	
Gerhard, J. W.	11	8	3	11	
Hope, Geo. (estate)†	10	3	3	6	
Jens, A.†	10		1	1	
Kuenne, A.	10				
Pick, F. C.	11	2		2	
Schulz, Fred	10	1		1	
Snow Bros.	10	5		5	
Willis, George	10				
Total		54	73	127	7
Fort Atkinson, Jefferson Co.—					
Shiley, H. B.	10	1	1	2	
Spooner, F. I.	10	2	2	4	
Total		3	3	6	
Grand Rapids, Wood Co.—					
Barnes, W. H.†	10				
Herschleb, H. A.	11				
Petrick, August	11	1		1	
Total		1		1	
Green Bay, Brown Co.—					
Annen Candy & Biscuit Co.†	10	54	61	115	30
Ayoub & Gorra,†	10	2	1	3	
Boston Candy Co.†	6	2	1	3	
Brenner-Gazette Co.†	10	17	38	55	8
Chase, M. H.†	10	2	2	4	
Clement & Groth†	10	2	2	4	
Kees, Mrs.	10				
Leich, F. C. & Co.	10	1	1	2	
Micksch, J. V.	4	1		1	
Orsie, E.†	10	6	1	7	
Rockstroch, J. C.	5		2	2	
Rzeszotarski, S.	10				
Smeets & Co.	10	2		2	
Soper & Brans	11	4		4	
Willart, H.	11	3		3	
Willart, H.	10½	9	1	10	
Total		100	110	210	38

TABLE I--BAKERIES AND CONFECTIONERIES INSPECTED--Continued.

Location and name of firm.	Hours of labor.	Employees.			
		Male.	Female.	Total.	Under 16 years of age.
Hartford, Washington Co.--					
Baumgartli, A.	10	1	1	2	
Thoma, H.	9	2		2	
Total		3	1	4	
Hartland, Waukesha Co.--					
Cradler, Mrs. Mary	10	1		1	
Hayward, Sawyer Co.--					
McCurety, Chas.	10		1	1	
Horicon, Dodge Co.--					
Miller, G. V.	10		1	1	
Hudson, St. Croix Co.					
Crandall Bros.	10	2		2	
Crocker & O'Connell Co.	10	2		2	
Hoffman, D.	10				
Nyhns, T.	8				
Singleman, H. M.	10	4		4	
Streeter, E. H.†.....	5				
Total		8		8	
Hurley, Iron Co.--					
Reibel, E. M.	10	1		1	
Vezette, Joseph	10	1		1	
Total		2		2	
Iron River, Bayfield Co.--					
Landry, Ed.	3				
Janesville, Rock Co.--					
Bennison & Lane	11	16		16	
Colvin Baking Co.	10	20	1	21	
Forzly Bros.†	5				
George, Frank†	3	1	1	2	
Gherke, Paul	10				
Grub & Lowell	10	2		2	
Janesville Candy Kitchen.....	5	2		2	
Phillips, Geo. N.†.....	10				
Razook, Allie†	10	2		2	
Reilley, T. F.	11	2		2	
Total		45	2	47	
Jefferson, Jefferson Co.--					
Nuernberger, Mrs. G.	10	1		1	
Schweiger, E. A.†.....	10				
Spangler Bros.	10	1		1	
Total		2		2	
Kaukauna, Outagamie Co. -					
Raught, Wm.	12		3	3	
Steppen, Joseph	13	1		1	
Wiggers, P.	11	2		2	
Total		3	3	6	

TABLE I—BAKERIES AND CONFECTIONERIES INSPECTED—Continued.

Location and name of firm.	Hours of labor.	Employees.			
		Male.	Female.	Total.	Under 16 years of age.
Kenosha, Kenosha Co.—					
Clement, S.	6				
Desimona, C.	6				
Faber & Co.	10				
Gomfor, Sam.	10	2		2	
Grosvenor, E. † ..	5				
Halberstadt & Co.	11	1	2	3	
Kupper Cracker Co.	10	6	2	8	
Lease, E. L. † ..	4				
Pofahl, J. H.	10	8	1	9	
Pofable, Louis.	10	2	2	4	
Richter, George.	11	5	1	6	
Schmidt, N. F. † ..	5		1	1	
Scheiler, H. J.	10	3	1	4	
Van Wie, M.	10				
White Bros.	10	1		1	
Winther, W.	10	3	2	5	
Total		31	12	43	
Kewaskum, Washington Co.—					
Heilmann, A.	10				
Kewaunee, Kewaunee Co.—					
Pezdera, J.	14				
Zuzanek, J.	14				
Kiel, Manitowoc Co.—					
Frenay, H.	10				
Kilbourn City, Columbia Co.—					
Moore, H. C.	10	1		1	
La Crosse, La Crosse Co.—					
Bjornstadt, J.	10				
Doerflinger & Co.	10	3	1	4	
Erikson, M.	10	2	1	3	
Funke, J. B., Co. † ..	10	29	131	160	10
Gesell, C. B. † ..	5	1	2	3	
Kratchwil, M. † ..	10	13	22	35	1
La Crosse Baking Co.	12	3	1	4	
La Crosse Cracker & Candy Co.*	10	34	32	66	6
Nelson, A. J.	10		1	1	
Park Store.	10	3	1	4	
Pfund, C. T. † ..	10	1	2	3	
Rupling Baking Co.	10	8	2	10	
Santrizos & Haderas † ..	6	1	1	2	
Scheuermann, I.	10				
Scheufler, E. † ..	10	1	2	3	
Schultz, R.	12	3	1	4	
Stonebreaker, H. A.	10	1		1	
Total		103	200	303	17
Ladysmith, Rusk Co.—					
Clark, W. E.	10				
Jung, C.	8				
Lake Geneva, Walworth Co.—					
Buell & Matson.	8	2		2	
Fisher, A. L.	10	6	2	8	
Perrin & Sons.	10	3	1	4	
Wilson & Warner † ..	10	1		1	
Total		12	3	15	

TABLE I—BAKERIES AND CONFECTIONERIES INSPECTED—Continued.

Location and name of firm.	Hours of labor.	Employees.			
		Male.	Female.	Total.	Under 16 years of age.
Lake Mills, Jefferson Co.—					
Gesall, A.	11		1	1	
Neuerberg, A. E.†	10	1	1	2	
Total		1	2	3	
Lancaster, Grant Co.—					
Johnston, D. C.	10	1		1	
Lathrop, W. L.	10	2	1	3	
Total		3	1	4	
Littlechute, Outagamie Co.—					
Vander Putter, John	14				
Madison, Dane Co.—					
Churchill, G. R.	10				
Heilman, George, (estate).....	10	11	3	14	
Kean & Taylor.....	10		1	1	
Lindauer, M.	10		1	1	
Madison Candy Co.†	10	13	20	33	3
Morschauer, J.	10				
Palace of Sweets†	10	4	16	20	
Quilty, M. J.	11	2	1	3	
Spencer, G. W.	10	3	1	4	
Teckemeyer Candy Co.†	10	10	14	24	2
Waltzinger, C.†	10	2	4	6	
Weber, N. E.	11	5	1	6	
Total		49	32	111	5
Manitowoc, Manitowoc Co.—					
Adams & Monka	10	1	1	2	
Carlin, F.	10				
Cerull, August	12	3	1	4	
Chapman, D. C.	10	3	1	4	
George Bros.	12	3	1	4	
Schroter, C. W.	12	4		4	
Weinert, John	10	1	1	2	
Total		15	5	20	
Marion, Waupaca Co.—					
Mohr, August	10				
Marinette, Marinette Co.—					
Button, August †	10				
Clemens, Mrs. Jennie.....	10				
Cooley, J. S.†	15		2	2	
Goslin Bros.†	4				
Linqest, A.	10	1		1	
Lites, George †	6	2		2	
Mathenson, A.	12				
Mueller, G. A.	10	3		3	
Schmidt, W. P.	12	3		3	
Sillevoid, L.	12				
Total		9	2	11	
Markesan, Green Lake Co.—					
Schneeberger, Fred	10				

TABLE I—BAKERIES AND CONFECTIONERIES INSPECTED—Continued.

Location and name of firm.	Hours of labor.	Employees.			
		Male	Female.	Total.	Under 16 years of age.
Marshfield, Wood Co.—					
Baker, R. J.†	10	1	1	2	.....
Harvey, J. H.	10	.....	1	1	.....
Jenkins, R. D.	10	1	1	2	.....
Meidel, A.	10	2	.....	2	1
Wright, L. A.	12	3	2	5	.....
Total		7	5	12	1
Mattoon, Shawano Co.—					
Ellinger, H. L.	10	.....	.....	.....	.....
Mauston, Juneau Co.—					
Blass, John	6	.....	.....	.....	.....
Mayville, Dodge Co.—					
Achtenhaugen, C.	8	.....	.....	.....	.....
Braun, Fred	8	1	1	2	.....
Medford, Taylor Co.—					
Fisl, T. J.	10	.....	.....	.....	.....
Goebing, Carl	10	2	.....	2	.....
Menasha, Winnebago Co.—					
Heitl, George	10	.....	.....	.....	.....
Kind & Hoheisel	10	3	2	5	.....
Menomonie, Dunn Co.—					
Anstett, J.	6	2	1	3	2
Sterndahl Bros.	15	.....	.....	.....	.....
Menomonee Falls, Waukesha Co.—					
Brunner, E. H.	10	.....	.....	.....	.....
Foster, Charles A.	12	7	1	8	.....
Merrill, Lincoln Co.—					
Baumann, O.	10	2	1	3	.....
Denne, L.	10	2	.....	2	.....
Hause, R. H.	10	1	1	2	.....
Walter, G.	10	.....	.....	.....	.....
Total		5	2	7	.....
Milton, Rock Co.—					
Arderson, J.	10	.....	.....	.....	.....
Milwaukee, Milwaukee Co.—					
Ackerman, J.	10	1	.....	1	.....
Albion Bakery Co.	10	20	10	30	.....
Altman, C. & J.†	6	.....	1	1	.....
Altman, M.	10	.....	.....	.....	.....
Ambrosia Chocolate Co.†	10	4	5	9	.....
American Candy Co.	10	73	102	175	47
Atlas Bread Factory	10	39	5	44	.....
Badger Candy Co.†	10	18	32	50	5
Barthlog, G.	10	2	.....	2	.....
Bauer, Fred	11	.....	.....	.....	.....
Bauer, J.	10	.....	.....	.....	.....
Bauer, M.	10	1	.....	1	.....
Bauman, H.	10	1	.....	1	.....
Becker, Henry	11	2	1	3	.....
Beidtsch, A.	10	1	.....	1	.....
Bender, F.	10	.....	.....	.....	.....
Benz, W.	10	1	.....	1	.....
Berger, F. H.	10	.....	.....	.....	.....
Berndt, Henry	10	2	.....	2	.....

TABLE I—BAKERIES AND CONFECTIONERIES INSPECTED—Continued.

Location and name of firm	Hours of labor.	Employees.			
		Male.	Female	Total.	Under 16 years of age.
Milwaukee—Continued.					
Berchler, M.	11	1	1	2	
Boch, Charles	10				
Boeder, Julius	10				
Boerth & Porth Co.	10	8		8	
Bonine, G.	10		2	2	
Borrmann, August †	10				
Braun, E.	11	3	1	4	
Brink, G. P.	10				
Brzoskowski, L.	10				
Buchholz, W.	6				
Buetow, E.	17				
Burck, D.	12	2		2	
Buscher, Louis	12	1	1	2	
Carpenter & Skiles	10	61	7	68	
Cesar, Frank	12	1		1	
Ceszynski	10	1		1	
Chacona, James †	10	8	15	23	1
Cohn Bros.	10	1		1	
Conroy, J.*	10	5	4	9	
Craemer, K.	10	1		1	
Cream City Candy Co. †	19	4	12	16	
Curath Co.	10				
Czaskowski, F.	12	1		1	
Daniels, C.	10				
Dessinger, A.	11	2		2	
Dielehner, August	12	1		1	
Dietrich, Frank	14				
Diez, M.	10	1	1	2	
Dinno & Sepulo	12				
Dix, A.	10	1		1	
Draeger, O.	8				
Dretske, A.	10	3	1	4	
Drischler, A.	11	2		2	
Drumiski, A.	10				
Drumiski, D.	12	1	1	2	
Dumke, Hugo	12	1	1	2	
Dwyer, Flora	10	1	4	5	
Ebling, T.	10	1		1	
Eckers, C.	11	1		1	
Engelkraut, J. H.	14				
Ehmke, Emil	11	1	1	2	
Ehrler, A.	10	4	3	7	1
Eich, John	12				
Engelhardt, F.	10				
Erdman, B.	11	1		1	
Ertl, George	10				
Escher, F.	10				
Escherbacher, A., & Son	10	2		2	
Ewert, W.	13	1		1	
Fahl, E.	10	2		2	
Fahl, Henry	12	2	1	3	
Farchmin, H. A.	10	3		3	
Fecker, H. F.	10	1	1	2	
Feller, A.	11	1		1	
Felder, J.	12	2		2	
Fernekes, J., & Son †	10	20	22	42	2
Fick, C.	10	7		7	4
Fleisher, A.	10	7	1	8	
Foelske, W.	12	1		1	
Forrer, R.	12	2		2	
Franke Bros.	10	1		1	
Fuhrman, A.	10				
Fuller Candy Co. †	10	2	6	8	
Furtmann, H.	10				

TABLE I—BAKERIES AND CONFECTIONERIES INSPECTED—Continued.

Location and name of firm.	Hours of labor.	Employees.			Under 16 years of age.
		Male.	Female.	Total.	
Milwaukee—Continued.					
Ganhs, Otto	11	1		1	
Gebhardt, Joseph	11	7	6	13	
George, O.	10	1		1	
Georgioff, J.	10	1		1	
Gerhard, M.	10	4		4	
Gerns, W. F.	12	1	1	2	
Gescher, B. B.	10	2		2	
Gimbel Bros.	9	2		2	
Goedtko, E.	10				
Geogel, F.	12	1		1	
Goetz, A.	10	1	1	2	
Gollier, George	10				
Gorkow, W.	10	1	1	2	
Graetz, F.	12	1		1	
Gattenthaler, G.	10	3	1	4	
Graven, Louis & Co.	10	7	1	8	2
Griess, Robert	13	1		1	
Gruettner, W.	11	2		2	
Guardalabene	10	3		3	
Guelzow, H.	10	3		3	1
Guender, M.	9				
Gunath, G.	10	1		1	
Guse, G.	11	3		3	
Gutenberg, A.	15				
Gutzke, W.	10				
Hach, C.	12	5	1	6	
Hackbarth, C. A.	11	2		2	
Hackbarth, E.	10				
Hackl, A.	10				
Hagendorff, P.	10				
Hahn, W.	12	8	1	9	
Held, Fred	9	1		1	
Hennes & Inden, Misses	10				
Henrich, A.	10				
Hepfinger, S.	10	1		1	
Herz, Joseph	10	1	1	2	
Herzberg, E.	10	1	1	2	
Herzberg, R.	12	1	1	2	
Hesse, M. T.	10				
Hettwer, J.	10	2	1	3	
Hille, Joseph	10				
Hoffman, A.	10	2		2	
Hohlwek, E.†	4				
Holl, A.	20	6		6	
Hollweck, J.	12	2	1	3	
Huyler, C.	10				
Ickstadt, Julius	10	2		2	
Imanovsky, Joseph	12	1		1	
Jackel, F.	12	1		1	
Jacks, J.	12	2		2	1
Jaeger, B.	10	16	1	17	
Jaeger, I.	10	30	3	33	
Jahr, E. E.	11				
Janyski, J.	12	3		3	
John, A.	12	1		1	
John, E.	12	1		1	
Johnston, Robert N.†	10	50	160	330	
Kadlec, E.	10				
Kammerer, George	12				
Kaiser, C.	9	5	1	6	
Kaiser, J.	12	2		2	
Kaiser, Otto	12	1	1	2	
Kallmeyer, C.	10	1		1	
Kalupa, A.	10	1		1	

TABLE I—BAKERIES AND CONFECTIONERIES INSPECTED—Continued.

Location and name of firm	Hours of labor.	Employees.			
		Male.	Female.	Total.	Under 16 years of age.
Milwaukee—Continued.					
Kapp, Leonard	10	1	1	2	.....
Kaupfer, D.	10	1	.....	1	.....
Keiper, B.	12	1	.....	1	.....
Knauer, A.	10½	2	1	3	.....
Knoll, Wm.	10	.....	.....	.....	.....
Knowski, August	11	3	.....	3	.....
Koba, J.	10	1	.....	1	.....
Konz, M.	11	2	.....	2	.....
Kopecky, J.	9	1	.....	1	.....
Korthals, G.	12	1	.....	1	.....
Kraemer, C.	17	1	.....	1	.....
Kraft, E.	10	.....	.....	.....	.....
Krasno, I.	10	2	.....	2	.....
Kratzchan, E.	14	.....	.....	.....	.....
Kremer, C.	12	4	2	6	.....
Kruege, August	12	5	.....	5	.....
Krueger, E.	12	1	.....	1	.....
Krueger, H.	11	3	.....	3	1
Krumholz, A.	10	.....	.....	.....	.....
Kuck, T.	10	1	1	2	.....
Kullman, Frank	10	4	1	5	.....
Kundman, Joseph	11	2	1	3	1
Kurz, H.	12	2	.....	2	.....
Kurz, J.	11	3	1	4	.....
Lack, August	10	.....	.....	.....	.....
Lammer, George	10	1	.....	1	.....
Lammert, B.	12	1	.....	1	.....
Lammert, F.	12	.....	.....	.....	.....
Lange, C.	11	1	.....	1	.....
Lange, E. M.	10	.....	.....	.....	.....
Lange, H.	12	2	.....	2	.....
Lawrence Bros. §	10	9	.....	9	5
Leenhouts, H. A.	13	.....	1	1	.....
Lehrke, F.	10	1	.....	1	1
Lemburger, Joseph	6	.....	.....	.....	.....
Lenandowsky, A.	10	.....	.....	.....	.....
Linderman, J.	10	.....	.....	.....	.....
Lindner, P.	10	.....	.....	.....	.....
Logiotatos, Costas	15	3	.....	3	.....
Litze, H.	10	.....	.....	.....	.....
Launsberg, W.	12	2	.....	2	.....
Ludtka, B.	10	.....	.....	.....	.....
Luercke, F.	10	.....	.....	.....	.....
Luick, W. F.	10	1	3	4	.....
Lukoszewicz, A.	12	2	.....	2	.....
Malich, I.	10	.....	.....	.....	.....
Mapphews, A.	10	4	1	5	.....
Marin, A.	10	.....	.....	.....	.....
Markmann, O.	10	5	1	6	1
Martini, F.	10	7	4	11	.....
Matt, E.	12	1	.....	1	.....
Matyas, Emil	10	4	1	5	.....
Mauer, J.	11	1	1	2	.....
Mauer, L.	10	12	.....	12	.....
Megge, H.	10	2	.....	2	.....
Meister & Co. †	10	1	4	5	.....
Menzel, P.	12	2	1	3	.....
Meos, O.	12	1	.....	1	.....
Mewes, C.	11	2	.....	2	.....
Mewes, Louis	10	.....	.....	.....	.....
Meyer, A.	10	3	.....	3	.....
Meyer, F.	10	2	.....	2	1
Meyer, W.	11	2	.....	2	.....
Michalski, N.	10	1	.....	1	.....

TABLE I—BAKERIES AND CONFECTIONERIES INSPECTED—Continued.

Location and name of firm.	Hours of labor.	Employees.			
		Male.	Female.	Total.	Under 13 years of age.
Milwaukee—Continued.					
Michl, J.	10				
Miller, O. H.†	10	1	2	3	
Miller, Robert	11	1	1	2	
Milwaukee Bakery	12	2		2	
Milwaukee Baking Co.	10	3		3	
Milwaukee Candy Co.†	10	24	13	37	2
Milwaukee Pretzel Co.	10	2		2	
Mittelstedt, R.	10	1	1	2	
Molt, J.	10	2		2	
Molt, M.	12	1		1	
Moses, C., & Co.	9	18	12	30	
Muelbauer, J.	12	1		1	
Mueller, George	12	2	1	3	
Mueller, H.	11	1		1	
Mueller, Hubert	9	2		2	
Muschinski, F.	10				
Nagel, Paul	12				
Narloch, J.	10	2		2	
National Biscuit Co.	10	100	90	190	26
Nilsen, P.	20	6	1	7	
Niklis & Thiakos	10	2		2	
Nitkowski, John	10	1		1	
Noll, Jos.	10	1		1	
Northwestern Home Bakery	10				
Oakland Baking Co.	10				
Obermeyer, K.	10	1	1	2	
Oehme, Louis	12	1	1	2	
Oestricher, John	11	1		1	
Ohelenfoust, J.	10	2		2	
Olson, Mrs. F. P.	10	1	4	5	
Oswald, B.	10				
Oswald, W.	11				
Ott, M.	12	2		2	
Panay, K.†	10	1	2	3	
Perski, R.	11	1		1	
Peters, F.	12	1		1	
Pfheil, Joseph	10				
Pfingart, The, Co.†	10	32	37	69	8
Penzer, Joseph	10	2	1	3	1
Pixley, C. A.	11	2	1	3	
Plantz, E.	11	2		2	
Plantz, W. A.	10				
Podell, G. O.	9	1	2	3	
Poehlman, J.	8	3	1	4	
Pohl, August	10	1		1	
Poshepnoy, A.	12	2		2	
Potrykus, T. M.	10				
Pruess, W.	12				
Pultow, E.	12				
Puhl, R.	10				
Puls, John	11	1		1	
Pusch, John	12	1		1	
Radtke, W.	11	2	1	3	
Ranson, S. J.†	6		2	2	
Reckinghauser, L.	10				
Redel, J. L.	10		1	1	
Redeicher, W.	10	2	1	3	
Reichelt, Robert	10	1		1	
Reif, J.	11	2		2	
Reinhardt, August	10				
Reinhardt, C.	10				
Rettberger, E.	12	1		1	
Rittberger, E.	10	1		1	
Roenhild, Richard	12	3		3	1

TABLE I—BAKERIES AND CONFECTIONERIES INSPECTED—Continued.

Location and name of firm.	Hours of labor.	Employees.			
		Male.	Female.	Total.	Under 16 years of age.
Milwaukee—Continued.					
Rogowsky, A.	12	2		2	
Rosecky, A.	10	2		2	
Roseckey, J.	11	2	1	3	
Rosenbaum, W.	10	14	2	16	
Rosencranz, W.	10	1		1	
Rossow, F.	12	2		2	
Rotter, Ida	12	1		1	
Rudolph, L.	11	1		1	
Rueckert, C. L.	10	1		1	
Ruff, F.	11	1		1	
Ruppin, M.	12	1	1	2	
Rybacki, J.	12	1		1	
Salan, J.†	4				
Salsman, Mrs. F. W.	11	2		2	
Sammer, George	10	1		1	
Sandek, A.	11	2	2	4	
Sanders, R.	10	1		1	
Sandes, R.	11	1	2	3	
Sauer, James	10				
Sbragia, A.†	4				
Schaffer, K.	14				
Scheidecker, E.	9				
Scheidecker, L.	10				
Schipper, J. F.	12	7		7	
Schmidt, A.	11	4		4	
Schmidt, B.	12	1	1	2	
Schmidt, F.	10	1	1	2	
Schmidt, Joseph	10				
Schmidt, J. S.	11	1		1	
Schneider, B.	10	2		2	
Schneider, F.	10	3		3	
Schneller, M.	10	1		1	
Schrank, T.	12	1		1	
Schuermann, M.	10	1	1	2	
Schuester, W.	10				
Schultz, F.	10	2	1	3	
Schultz, G. A.	12				
Schurrer, O.	8	1		1	
Schwaer, Emil	12	1		1	
Schwind, Fred	10				
Sherwood, Mrs.	10				
Sickling, G.	10	4	1	5	
Siefert, August	10				
Siefried, A.	10	2	1	3	
Singer, F. B.	11	4	1	5	
Stiveling, A.	10		1	1	
Skiles Bakery Co.	10	30	3	33	
Smith & Co.	10				
Sommers, F.	11	3		3	
Soulia, J. L.†	10				
Spilos & Antonopoulos	10	4		4	
Standard Candy Co.†	10	11	22	33	
Sternkopf, H.	11	1	1	2	
Szweda, Peter	11	2		2	
Talski, Joseph	12	1		1	
Talsky, A.	12	1		1	
Talsky, R.	10	1		1	
Tansky, F.	10	2		2	
Tavoulares, P.	10	3		3	
Thalman, F.	9	2		2	
Thanner, O.	10	1	1	2	
Thomsen Bros.	13	1		1	
Thuring, George	10	4		4	
Tillema, P. & Son†	10	3	7	10	

TABLE I—BAKERIES AND CONFECTIONERIES INSPECTED—Continued.

Location and name of firm.	Hours of labor.	Employees.			
		Male.	Female.	Total.	Under 16 years of age.
Milwaukee—Continued.					
Tocco, J. & Maniaci I.	11				
Trettin, E.	10½	5	1	6	
Trettin, F.	10	1		1	
Turner, M.	11	1		1	
Tyborski, T.	10				
Urich, Jacob	11	1		1	
Uomansky, J.	12	2		2	
Vegelah, W.	10	1		1	
Vogel, F.	10	2		2	
Vohland, E.	10				
Volt, C.	10	1		1	
Voss, W.	10				
Wacholz, E.	12				
Wagner, A.	10	1		1	
Wagner, E.	13	1		1	
Waltzinger, C.	11	2		2	
Weber, A.*	10	12	26	38	
Weickert, G.	19	1	1	2	
Weingart, Fred	10	1	1	2	
Weis, Leon	10	1		1	
Weiser, Julius	12	1		1	
Wellen, A.	13		1	1	
Wendelberg, C.	15				
Wendelberg, F.	12				
Wesely, J.	10				
Wilhelms, Geo.	10	2		2	
Williams, John	11	5	1	6	
Witte, August	10				
Winterhalder, H.	10	1		1	
Wirth, G.	11	1		1	
Witte, Fred	11	2	1	3	
Witte, L.	12	1		1	1
Zastrow, W. A.	11			1	
Ziegler, Geo. Co.†	10	164	169	333	91
Zimprich, G.	10		1	1	
Total		1,354	579	2,333	203
Mineral Point, Iowa Co.—					
Horning, E.	10	1	1	2	
Minocqua, Vilas Co.—					
Fuchs, George	10	1		1	
Monroe, Green Co.—					
Durat, N.	10	2	2	4	
Pheiffer, George	10	3	2	5	
Wagner, J.	10	2	1	3	
Ziener, A. W.	11	2	2	4	
Total		9	7	16	
Neenah, Winnebago Co.—					
Dix, Albert	10		1	1	
Bstvad, E. V. C.	10	1		1	
Ohde, Karl	10	1	1	2	
Reynolds, G. J.†	10	1	1	2	
Steele's Candy Kitchen†	6		2	2	
Total		3	5	8	

TABLE I—BAKERIES AND CONFECTIONERIES INSPECTED—Continued.

Location and name of firm.	Hours of labor.	Employees.			
		Male.	Female.	Total.	Under 16 years of age.
Neillsville, Clark Co.—					
Johnson, W. L.†	10				
Kubat, A. R.	10		1	1	
Lange, Max L.	18		1	1	
Schiess, Conrad	9				
Total			2	2	
New Glarus, Green Co.—					
Mueller, Ernst	12	1		1	
Schisser, J.	10	2		2	
Total		3		3	
New Lisbon, Juneau Co.—					
Shane, J. W.	10		1	1	
Waterman, H.	10		1	1	
Total			2	2	
New London, Waupaca Co.—					
Holtzboon, H.	10				
Peotter, Ernest	10				
New Richmond, St. Croix Co.—					
Nelson, G. E.	8		2	2	
North Milwaukee, Milwaukee Co.—					
Jacob, J.	10	2		2	
Fisher, Joe	11	1		1	
Total		3		3	
Oconomowoc, Waukesha Co.—					
Hanson, P.	10	2		2	
Heyn, C. E.	11	1		1	
Raasch, H. F.	12	1		1	
Total		4		4	
Oconto, Oconto Co.—					
Aubry, N.	10				
Carr, G. H.†	19				
Demas, John†	10				
Foulds, F.†	6	1	1	2	
Maloy, Thos.	16		1	1	
Total		1	2	3	
Oshkosh, Winnebago Co.—					
Bloechl, M. F.	12	1	1	2	
Cole, D. S.	19		1	1	
Crowell, R. J.	11	4	2	6	1
Damuth, H. D.	12		5	5	
Fischer, A.	12	3		3	
Gust, E.	10		1	1	
Heiss, Mrs. F.	11	3	1	4	
Kamm, H.	10				
Kolb, P. H.†	10	3	6	9	
Kratz, F. W.†	10	2	2	4	
Laus, Joseph†	10	2	3	5	1
Lindner, H.	11	3		3	
Luebke, C. F.	24	9	1	10	

TABLE I—BAKERIES AND CONFECTIONERIES INSPECTED—Continued.

Location and name of firm.	Hours of labor.	Employees.			
		Male.	Female.	Total.	Under 16 years of age.
Oshkosh—Continued.					
Pelton, H. G.	12	2	2	4	
Ristow, A.	10		1	1	
Steele, A. A.†	10		1	1	
Wabnitz, K. F.	12	1	1	2	1
Wickert, K.†	10	2	3	5	
Total		35	31	66	3
Parkfalls, Price Co.—					
Hepfinger, Simon	8	1		1	
Phillips, Price Co.—					
Grob Bros.	10				
Honeywell, F. R.	10				
Platteville, Grant Co.—					
Henning, N.	10	4	2	6	
Mitchell, J. L.	19	2		2	
Sander, Henry	12	2		2	
Schroeder, L. J.	10	2		2	
Total		10	2	12	
Plymouth, Sheboygan Co.—					
Bouman, H.	10	1		1	
Mueller, M.	10	2	1	3	
Russmueller, I.	10	1	1	2	
Total		4	2	6	
Portage, Columbia Co.—					
Buglass, D.	11	3	1	4	
Dietrich, George	10		2	2	
Monthey, R. A.	10	1	2	3	
Total		4	5	9	
Port Washington, Ozaukee Co.—					
Johnston, A. J.	12	1	1	2	
Schuder, Joseph	12	3		3	
Total		4	1	5	
Prairie du Chien, Crawford Co.—					
Marusek, S.	8	1		1	
Racine, Racine Co.—					
Betteray, Mrs. T.	10	3		3	
Halberstadt, J.	10	1	1	2	
Jenkins, G. R.	10	2	2	4	
Jenniches, P.	10	2		2	
Lintner, F.	11	12	4	16	
Lochowitz, E.	11	2		2	
Mazurine, Georget	10	1	2	3	
Schneckloth & Johnson	19	3		3	
Schulz, O. B.	10	8	2	10	
Tidyman, M.	10	8	4	12	1
Wittmore, L.†	4				
Total		42	15	57	1
Randolph, Dodge Co.					
Hess, F. W.	10				

TABLE I—BAKERIES AND CONFECTIONERIES INSPECTED—Continued.

Location and name of firm.	Hours of labor.	Employees.			
		Male.	Female.	Total.	Under 16 years of age.
Reedsburg, Sauk Co.— Kerringen, C. P.	10	3	2	5	.....
Rhineland, Oneida Co.— Kirke, C. D. & Co.	10	1	1	2	.....
Zinn, R.	10	1	.....	1	.....
Total		2	1	3	.....
Rice Lake, Barron Co.— Finsterwalder, M.	10	1	.....	1	.....
Gustavson, G. I.	10	1	2	3	.....
Total		2	2	4	.....
Richland Center, Richland Co.— Starr, J.	10	2	5	7	.....
Wertz, A. C.	10	.....	3	3	.....
Total		2	3	10	.....
Ripon, Fond du Lac Co.— Jones, F. E.†	10	.....	1	1	.....
Ruekert, N.	11	3	1	4	.....
Total		3	2	5	.....
River Falls, Pierce Co.— Richardson, M. J. & Co.	10	.....	.....	.....	.....
Woehrl, J. W.	10½	3	.....	3	.....
Yocum & Boles	8	2	.....	2	.....
Total		5	.....	5	.....
Schleisingsville, Washington Co.— Kachlemeier, F.	9	.....	.....	.....	.....
Seymour, Outagamie Co.— Becker, Aloys	10	1	.....	1	.....
Shawano, Shawano Co.— Foulds, F. K.†	10	.....	1	1	.....
Ludolph, G. W.	10	2	.....	2	.....
Miller, J. M.	10	.....	.....	.....	.....
Rohloff, R. P.	12	1	1	2	.....
Sprague, E. G.	10	1	.....	1	.....
Total		4	2	6	.....
Sheboygan, Sheboygan Co.— Baumann, B.	10	2	.....	2	.....
Dresler, A. R.†	10	.....	1	1	.....
Fahres, John	10	4	1	5	.....
Guck Bakery	10	1	.....	1	.....
Hirsch, G. A.	10	3	.....	3	.....
Kalitt, A. H.†	10	.....	2	2	.....
Keil, E.	10	.....	.....	.....	.....
Mohr, E.	11	10	5	15	.....
Pfister, Thos.	10	.....	.....	.....	.....
Skaff Bros.†	10	.....	.....	.....	.....
Spangenberg, F.	12	5	1	6	.....
Wagner, G. A. (estate)	10	1	1	2	.....
Wicker, Louis	10	2	.....	2	.....
Winnicur, A.	10	.....	.....	.....	.....
Total		28	11	39	.....

TABLE I—BAKERIES AND CONFECTIONERIES INSPECTED—Continued.

Location and name of firm.	Hours of labor.	Employees.			
		Male.	Female.	Total.	Under 16 years of age.
Sheboygan Falls, Sheboygan Co.— Draeger, F.	10				
Shell Lake, Washburn Co.— Gaerth, George	10				
Habelitz, Herman	10				
South Milwaukee, Milwaukee Co.— Ceszinske, Joseph	10	1		1	
Vogel, L.	11	3	1	4	
Total		4	1	5	
Sparta, Monroe Co.— Buchaman, J. M.†	4		4	4	
Doxrud, O. H.	10				
Herman, W. N.	10				
Kuhn, C.	10	1	1	2	
Total		1	5	6	
Spooner, Washburn Co.— Nehlin, Charles	10				
Stiburek, C. W.	8				
Stanley, Chippewa Co.— Urquhart, R. R.	9	1	1	2	
Stevens Point, Portage Co.— Bennett, D.	10	2	1	3	
Denka, August	12	2		2	
Hetzel & George, O. B.†	10	1	1	2	
Julier, E. A.	10	2	1	3	
Mocogari Bros.	10	1		1	
Stockley, F.	12	2		2	
Total		19	3	13	
Stoughton, Dane Co.— Jacobson Bros.	10	2	1	3	
Oleson, Mrs. Anna	10	2		2	
Romnes, Hans	13½	1	2	3	
Total		5	3	8	
Sturgeon Bay, Door Co.— Fengler, F.	8				
Klinkenberg, E.	10				
Schmid, J.	11	2	1	3	
Sun Prairie, Dane Co.— Burrington & Norton	10	1		1	
Superior, Douglas Co.— Bergeson Bros.	10	5	1	6	
Cronin, Mrs. H.	10		1	1	
Crowell, C. W. & Co.	10	3	2	5	
Hinkel, Frank	12	5	3	8	
Iowa Bakery	10	3	1	4	
Jensen & Larsen	10	3	2	5	
Johnson, I.	10				
Leamon, George	11	6	2	8	
Moores, Albert	10	1		1	

TABLE I—BAKERIES AND CONFECTIONERIES INSPECTED—Continued.

Location and name of firm.	Hours of labor.	Employees.			
		Male.	Female.	Total.	Under 16 years of age.
Superior—Continued.					
Nelson, N.	12	4		4	
Ord, G. H. & Co.	10	2		2	
Strauch, J.	10	2	1	3	
Ward, M.	10	1		1	
Wassuna, George	11	3	2	5	
Total		38	15	53	
Theresa, Dodge Co.—					
Frings, Wm.	10	1		1	
Tomah, Monroe Co.—					
Benz, Fred	10	1		1	
McMullen, W. J.	10	1		1	
Total		2		2	
Tomahawk, Lincoln Co.—					
Mennier, J. W.	10	2		2	
Town of Lake, Milwaukee Co.—					
Pleva, Joseph	10	1		1	
Two Rivers, Manitowoc Co.—					
Gehrke, August	10				
Hartung, H.	11	1	1	2	
Reubel, J.	10				
Total		1	1	2	
Viroqua, Vernon Co.—					
Lind, W. D.	10		2	2	
Nelson, C. A.	10				
Total			2	2	
Washburn, Bayfield Co.—					
Burggren, H.	12	1		1	
Dickey, Mrs. C.	8				
Total		1		1	
Waterloo, Jefferson Co.—					
Jana, John	10				
Watertown, Jefferson Co.—					
Heyn, C. M.	10	2		2	
Koser, H. J.	10	4	1	5	
Kramer, W.	11	1		1	
Krueger's Bakery	11	3	2	5	
Leopold, Robert	10	4	1	5	
Radtke & Sonf	10	2	3	5	
Wagner, L. W. †	10	1	3	4	
Total		17	10	27	
Waukesha, Waukesha Co.—					
Arnold, W.	12	3		3	
Bostwick, E. F. †	10	1	1	2	
Ewing, John	10		2	2	
Kurzahls, J.	10	2		2	
Reid, W.	10	1		1	
Truax, L. E.	8		1	1	
Total		7	4	11	

TABLE I—BAKERIES AND CONFECTIONERIES INSPECTED—Continued.

Location and name of firm.	Hours of labor.	Employees.			Under 16 years of age.
		Male.	Female.	Total.	
Waupaca, Waupaca Co.—					
Dalton, A. O.	16	2	.....	2	.....
Hanson, R. R.	10	2	2	4	.....
Total		4	2	6	.....
Waupun, Fond du Lac Co.—					
Enggard, P.	10	1	.....	1	.....
Griebaum, Peter and John	12	1	1	2	.....
Total		2	1	3	.....
Wausau, Marathon Co.—					
Hess, George H.	10	2	2	4	.....
Nagreen, C. R.†	10	1	1	2	.....
Osswald, H.	12	5	2	7	.....
Osswald, J. F.	11	5	2	3	.....
Steiber & Price	10	.....	.....	.....	.....
Sterk, J.†	19	1	4	5	.....
The Peth Templeton Co.†	10	10	3	13	1
Young, J. P.†	10	.....	3	3	.....
Total		25	22	47	1
Wauwatosa, Milwaukee Co.—					
Baier, W.	11	2	.....	2	.....
Brek, C.	10	1	1	2	.....
Milwaukee County Farm and Alms House	9	3	.....	3	.....
Total		6	1	7	.....
West Allis, Milwaukee Co.—					
Schmid, George	19	1	.....	1	.....
West Bend, Washington Co.—					
Bauer, H. F.	10	1	1	2	.....
Schlegel, G.	11	2	.....	2	.....
Total		3	1	4	.....
West Salem, La Crosse Co.—					
Gilbertson, G.	8	2	2	4	.....
Weyauwega, Waupaca Co.—					
Edwards, E. O.	6	1	1	2	.....
Livermore, D. C.	19	.....	1	1	.....
Total		1	2	3	.....
Whitewater, Walworth Co.—					
Brown, Frank	10	1	.....	1	.....
Harris, W. L.	9	2	1	3	.....
Sachs, Mrs. A.	10	1	.....	1	.....
Total		4	1	5	.....
Williams Bay, Walworth Co.—					
Lackey, W. J.	10	1	1	2	.....
Total		2,296	1,637	3,933	282

EXPLANATORY.

* Bakery and Confectionery.

† Confectionery.

‡ Bakery and Grocery.

§ Macaroni Factory.

TABLE II--SUMMARY, BY CITIES AND VILLAGES, OF ESTABLISHMENTS INSPECTED, WITH EMPLOYEES CLASSIFIED AS TO SEX AND AGE.

Place.	No. of establishments.	Employees.			Children under 16 years.
		Male.	Female.	Total.	
Algoma	1				
Antigo	4	8	6	14	
Appleton	13	12	7	19	
Ashland	5	17	1	18	
Abbotsford	1				
Alma	1				
Baraboo	4	2	1	3	
Barron	2	1	3	4	
Bayfield	2				
Beloit	5	30	7	37	
Berlin	4	4	3	7	
Biramwood	1				
Black River Falls	2	2		2	
Bloomer	1	1		1	
Beaver Dam	4	5	3	3	
Boscobel	1	1	1	2	
Brillion	1				
Brodhead	2	6		6	
Burlington	3	1	1	2	
Cedarburg	3	4	1	5	
Chetek	2	1		1	
Chilton	1	1	1	2	
Chippewa Falls	5	5	10	15	
Clintonville	2		1	1	
Columbus	1	2	1	3	
Crandon	1				
Cuba	2	3		3	1
Cudahy	1	2		2	
Darlington	2	2	1	3	
Delavan	2	5	3	8	
De Pere	7	3	2	5	
Dodgeville	1				
Eagle River	2				
Eau Claire	6	29	24	53	1
Edgerton	1				
Elkhorn	1	1		1	
Ellsworth	1	1	2	3	
Evansville	4		1	1	
Fennimore	1				
Florence	1				
Fond du Lac	13	54	73	127	7
Fort Atkinson	2	3	3	6	
Grand Rapids	3	1		1	
Green Bay	15	100	110	210	38
Hartford	2	3	1	4	
Hartland	1	1		1	
Hayward	1		1	1	
Horicon	1		1	1	
Hudson	6	8		8	
Hurley	2	2		2	
Iron River	1				
Janesville	10	45	2	47	
Jefferson	3	2		2	
Kaukauna	3	3	3	6	
Kenosha	15	31	12	43	
Kewaskum	1				
Kewaunee	2				
Kiel	1				
Kilbourn City	1	1		1	
La Crosse	17	103	200	303	17
Ladysmith	2				
Lake Geneva	4	12	3	15	
Lake Mills	2	1	2	3	
Lancaster	2	3	1	4	

TABLE II—SUMMARY OF ESTABLISHMENTS INSPECTED—Continued.

Place.	No. of establishments.	Employees.			
		Male.	Female.	Total.	Children under 16 years.
Littlechute	1				
Madison	13	49	62	111	5
Manitowoc	7	15	5	20	
Marinette	10	9	2	11	
Marion	1				
Markesan	1				
Marshfield	5	7	5	12	1
Mattoon	1				
Mauston	1				
Mayville	2	1	1	2	
Medford	2	2		2	
Menasha	2	3	2	5	
Menomonie	2	2	1	3	2
Menomonee Falls	2	7	1	8	
Merrill	4	5	2	7	
Milton	1				
Milwaukee	376	1,361	832	2,243	206
Mineral Point	1	1	1	2	
Minocqua	1	1		1	
Monroe	4	9	7	16	
Neenah	4	3	3	6	
Neillsville	4		2	2	
New Lisbon	2		2	2	
New London	2				
New Richmond	1		2	2	
New Glarus	2	3		3	
Oconomowoc	3	4		4	
Oconto	5	1	2	3	
Oshkosh	13	35	31	66	2
Parkfalls	1	1		1	
Phillips	2				
Platteville	2	9	3	12	
Plymouth	3	4	2	6	
Portage	3	4	5	9	
Port Washington	2	4	1	5	
Prairie du Chien	1	1		1	
Racine	11	42	15	57	1
Randolph	1				
Reedsburg	1	3	2	5	
Rhineland	2	2	1	3	
Rice Lake	2	2	2	4	
Richland Center	2	2	3	10	
Ripon	2	3	2	5	
River Falls	3	5		5	
Schleisingsville	1				
Seymour	1	1		1	
Shawano	5	4	2	6	
Sheboygan	14	32	13	45	
Sheboygan Falls	1				
Shell Lake	2				
Sparta	4	1	5	6	
Spooner	2				
Stanley	1	1	1	2	
Stevens Point	6	10	3	13	
Stoughton	3	5	3	8	
Sturgeon Bay	3	2	1	3	
Sun Prairie	1	1		1	
Superior	14	38	15	53	
Theresa	1	1		1	
Tomah	2	2		2	
Tomahawk	1	2		2	
Two Rivers	3	2	1	3	
Viroqua	2	2		2	
Waterloo	1				
Watertown	7	17	10	27	

TABLE II—SUMMARY OF ESTABLISHMENTS INSPECTED—Continued.

Place.	No. of establishments.	Employees.			Children under 16 years.
		Male.	Female.	Total.	
Washburn	2	1	.....	1	.....
Waukesha	6	7	4	11	.....
Waupaca	2	4	2	6	.....
Waupun	2	2	1	3	.....
Wausau	3	25	23	47	1
Wauwatosa	3	3	1	4	.....
West Allis	1	1	.....	1	.....
West Bend	2	3	1	4	.....
West Salem	1	2	2	4	.....
Weyauwega	2	1	2	3	.....
Whitewater	3	4	1	5	.....
Williams Bay	1	1	1	2	.....
Total	839	2,296	1,337	3,933	282

The foregoing tables show totals of 839 establishments inspected and 3,933 persons employed. Of the latter number 282 are children under 16 years of age. These totals are further analyzed in Tables III–XII, following.

TABLE III—ESTABLISHMENTS CLASSIFIED AS TO WHETHER LOCATED "IN MILWAUKEE" OR "OUTSIDE MILWAUKEE."

Classification.	Establishments.	
	Number	Per cent.
In Milwaukee	376	44.8
Outside Milwaukee	463	55.2
Total inspected	839	100.0

It is apparent from the above table that the number of bakeries inspected outside of Milwaukee is but a fourth greater than the number inspected in Milwaukee. The proportion is practically the same as that found in the years 1903 and 1904.

TABLE IV—CLASSIFICATION OF EMPLOYEES ACCORDING TO SEX AND AGE.

Employees.	Number.	Per cent.
Male persons employed	2,296	58.4
Female persons employed	1,637	41.6
All persons employed	3,933	100.0
Persons over 16 years of age.....	3,651	92.8
Children under 16 years.....	282	7.2
All employees	3,933	100.0

TABLE V—RESPECTIVE PROPORTION OF PERSONS EMPLOYED IN MILWAUKEE AND OUTSIDE THAT CITY, WHEN CLASSIFIED AS TO SEX.

Employees.	Number.			Per cent.		
	In Milwaukee.	Outside Milwaukee.	Total.	In Milwaukee	Outside Milwaukee.	Total.
Male persons employed....	1,361	935	2,296	59.3	40.7	100.0
Female persons employed..	882	755	1,637	53.9	46.1	100.0
All persons employed	2,243	1,690	3,933	57.0	43.0	100.0

From Tables IV and V it is seen that about 3-5 of all bakery employees are males, and 2-5 females. Over 9-10 of all employees are over 16 years of age, about one in every 14 persons being a child under 16 years. Of all employees, 57 per cent are working in Milwaukee and 43 per cent in other parts of the state. About 3-5 of all male employees are in Milwaukee, while a slightly smaller proportion of all female employees are working in that city.

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TABLE VI—MALE EMPLOYEES CLASSIFIED ACCORDING TO NUMBER OF HOURS' LABOR PER DAY.

Classification,	In Milwaukee.		Outside Milwaukee.		Total.	
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
Persons employed—						
Seven hours or less.....			21	2.2	21	0.9
Eight hours	4	0.3	18	1.9	22	1.0
Nine hours	36	2.6	5	0.5	41	1.8
Ten hours	1,987	79.8	311	65.6	1,698	78.9
Eleven hours	104	7.7	155	16.5	259	11.3
Twelve hours or more....	130	9.6	125	13.3	255	11.1
Total	1,361	100.0	935	100.0	2,296	100.0

TABLE VII—FEMALE EMPLOYEES CLASSIFIED ACCORDING TO NUMBER OF HOURS' LABOR PER DAY.

Classification,	In Milwaukee.		Outside Milwaukee.		Total.	
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
Persons employed—						
Seven hours or less.....	3	0.3	21	2.7	24	1.5
Eight hours	1	0.1	9	1.2	10	0.6
Nine hours	17	1.9	2	0.3	19	1.2
Ten hours	816	92.5	646	85.5	1,462	89.2
Eleven hours	25	2.9	41	5.5	66	4.1
Twelve hours or more....	20	2.3	36	4.8	56	3.4
Total	832	100.0	755	100.0	1,637	100.0

TABLE VIII—TOTAL NUMBER OF EMPLOYEES CLASSIFIED ACCORDING TO NUMBER OF HOURS' LABOR PER DAY.

Classification,	In Milwaukee.		Outside Milwaukee.		Total.	
	No.	Per cent.	No.	Per cent.	No.	Per cent.
Persons employed—						
Seven hours or less.....	3	0.1	42	2.5	45	1.1
Eight hours	5	0.2	27	1.6	32	0.8
Nine hours	53	2.4	7	0.4	60	1.5
Ten hours	1,908	84.9	1,257	74.4	3,165	80.4
Eleven hours	129	5.8	196	11.6	325	8.3
Twelve hours or more ...	150	6.6	161	9.5	311	7.9
Total	2,243	100.0	1,699	100.0	3,933	100.0

TABLE IX—CHILDREN UNDER 16 YEARS OF AGE CLASSIFIED AS TO NUMBER OF HOURS' LABOR PER DAY.

Classification.	In Milwaukee.		Outside Milwaukee.		Total.	
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
Children employed—						
Seven hours or less.....			1	1.3	1	0.4
Nine hours	2	1.0			2	0.7
Ten hours	201	97.5	74	97.4	275	97.5
Eleven hours	2	1.0	1	1.3	3	1.0
Twelve hours or more ...	1	0.5			1	0.4
Total	206	100.0	76	100.0	282	100.0

TABLE X—BAKERY AND CONFECTIONERY ESTABLISHMENTS CLASSIFIED ACCORDING TO NUMBER OF HOURS' LABOR REQUIRED OF EMPLOYEES.

Classification.	In Milwaukee.		Outside Milwaukee.		Total.	
	No.	Per cent.	No.	Per cent.	No.	Per cent.
Establishments requiring—						
Seven hours or less.....	7	1.9	33	7.1	40	4.8
Eight hours	3	.8	21	4.5	24	2.9
Nine hours	11	2.9	6	1.3	17	2.0
Ten hours	197	52.4	267	57.6	464	55.3
Eleven hours	59	14.9	44	9.5	100	11.9
Twelve hours or more....	91	24.2	49	10.7	140	16.7
Irregular hours	11	2.9	43	9.3	54	6.4
Total	376	100.0	463	100.0	839	100.0

Tables VI-X show the number of hours' labor required daily of employees in the establishments inspected. A larger proportion of establishments in Milwaukee than outside that city require either eleven or twelve hours' work per day. In spite of this fact, however, a smaller proportion of employees work over ten hours daily in Milwaukee than elsewhere in the state. The apparent contradiction is to be explained by the fact that it is in general only the smaller firms in Milwaukee, that require more than ten hours' work of their employees. About 3-4 of all male employees in the state and nearly 9-10 of all females work ten hours per day. Fewer women than men,

both in Milwaukee and outside that city, work over ten hours daily. Practically all child employees under 16 years of age work ten hours. In those establishments which required more than ten hours' work of the children employed, orders were issued by the inspector to reduce the time required to ten hours daily, in conformity with the law.

TABLE XI—EMPLOYEES CLASSIFIED AS TO TIME AND KIND OF WAGE PAYMENTS.

Classification.	No.	Per cent.
Employees paid—		
Weekly, cash	3,616	92.0
Semi-monthly, cash	11	0.3
Monthly, cash	5	0.1
Weekly, by check	277	7.0
Monthly, by check	20	0.5
Employees not reported upon	4	0.1
Total	3,933	100.0

TABLE XII—ESTABLISHMENTS CLASSIFIED AS TO TIME AND KIND OF WAGE PAYMENTS.

Classification.	No.	Per cent.
Establishments paying—		
Weekly, cash	616	73.5
Semi-monthly, cash	2	0.2
Monthly, cash	6	0.7
Weekly, by check	41	4.9
Monthly, by check	6	0.7
Establishments with no employees	169	19.8
Establishments not reporting	2	0.2
Total	839	100.0

From Tables XI and XII it is evident that 99 per cent of all bakery employees are paid weekly, and that 92 per cent of all are paid in cash. Of all establishments, about 80 per cent employ wage-earners. Of these, all but about 1-8 pay their employees cash weekly.

TABLE XIII—STORIES OCCUPIED BY BAKERIES AND CONFECTION-
ERIES.

Establishments occupying—	Number.	Per cent.
Basement and first floor	351	41.9
Basement, first and second floors	6	0.7
Basement, first, second and third floors	2	0.2
Basement, first and third floors	1	0.1
Basement and second floors	1	0.1
Basement	6	0.7
First floor	468	55.8
First and second floors	4	0.5
Total	839	100.0

TABLE XIV—NUMBER OF BASEMENTS, ETC., OCCUPIED.

Floors occupied.	Number.	Per cent.
Basements	367	30.2
First floors	832	68.5
Second floors	13	1.1
Third floors	3	0.2
Total	1,215	100.0

XV—ESTABLISHMENTS CLASSIFIED ACCORDING TO NUMBER OF
WORK-ROOMS.

Establishments having.	In Milwaukee.		Outside Milwaukee.		Total.	
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
One work-room	335	89.1	433	93.5	768	91.5
Two work-rooms	27	7.1	18	3.9	45	5.5
Three work-rooms	9	2.3	7	1.5	16	1.9
Four work-rooms	1	0.3	1	0.2	2	0.2
Five work-rooms	1	0.3	3	0.7	3	0.4
Six work-rooms	1	0.3	1	0.2	2	0.2
Ten work-rooms	1	0.3	.....	.....	1	0.1
Eleven work-rooms	1	0.3	.....	.....	1	0.1
Twelve work-rooms	1	0.3	.....	.....	1	0.1
Total	376	100.0	493	100.0	839	100.0

It is apparent from Tables XIII-XV that the majority of the work-rooms of bakeries are on the first floor of the buildings used. Somewhat less than half as many are situated in base-

ments, while a very few are on the second and third floors. Over 90 per cent of all establishments have but one work-room each, the proportion of those having more than one being slightly greater in Milwaukee than outside that city.

TABLE XVI—NUMBER OF BUILDINGS, CLASSIFIED AS TO KIND AND HEIGHT.

Classification.	In Milwaukee.		Outside Milwaukee.		Total.	
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
Frame buildings--						
One story	46	15.6	46	20.3	92	17.7
Two stories	248	84.4	181	79.7	429	82.3
Total	294	100.0	227	100.0	521	100.0
Brick buildings (including 6 of stone)--						
One story	3	3.2	13	5.3	16	4.7
Two stories	76	80.0	221	89.4	297	86.8
Three stories	11	11.5	12	4.9	23	6.7
Four stories	4	4.2	1	.4	5	1.5
Five stories	1	1.1	.....	.....	1	.3
Total	95	100.0	247	100.0	342	100.0
All buildings--						
One story	49	12.6	59	12.5	108	12.5
Two stories	324	83.3	402	84.8	726	84.1
Three stories	11	2.8	12	2.5	23	2.7
Four stories	4	1.0	1	.2	5	.6
Five stories	1	.3	.....	.....	1	.1
Total	389	100.0	474	100.0	863	100.0
Two stories or less	373	95.9	461	97.3	834	96.6
Three stories or more ..	16	4.1	13	2.7	29	3.4
Total	389	100.0	474	100.0	863	100.0
Relative proportion of buildings--						
Frame	294	75.6	227	47.9	521	60.4
Brick or stone	95	24.4	247	52.1	342	39.6
Total	389	100.0	474	100.0	863	100.0

From Table XVI it may be seen that, of those inspected, none of the frame buildings used as a bakery is over two stories in height. A few brick buildings have three, four or five stories. Of all buildings, about 5-6 are of two stories, while over 96 per cent are of two stories or less. It should be recalled in this connection, however, that, according to Table XIII, the basement is used in over 40 per cent of the buildings occupied.

Three-fourths of the bakeries inspected in Milwaukee occupy frame buildings, while outside of that city slightly over half the buildings are of brick. In the state as a whole, three-fifths are frame buildings.

TABLE XVII—BUILDINGS THREE OR MORE STORIES HIGH CLASSIFIED AS TO FIRE-ESCAPES AND OUTSIDE STAIRWAYS.

Buildings.	In Milwaukee.		Outside Milwaukee.		Total.	
	Number.	Per cent.	Number	Per cent.	Number.	Per cent.
Having fire-escapes only ..	9	56.3	8	61.5	17	58.6
Having outside stairways only	4	25.0	1	7.7	5	17.2
Having both	1	6.2	.....	.....	1	3.5
Having neither	2	12.5	4	30.8	6	20.7
Total	16	100.0	13	100.0	29	100.0

TABLE XVIII—NUMBER OF FIRE-ESCAPES, OUTSIDE AND INSIDE STAIRWAYS.

Classification.	In Milwaukee.		Outside Milwaukee.		Total.	
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
Fire-escapes	29	3.3	12	3.7	41	1.8
Outside stairways	335	37.8	335	41.2	670	39.5
Inside stairways	521	58.9	466	56.1	987	58.7
Total	885	100.0	813	100.0	1,698	100.0

The factory laws provide that every factory building three or more stories high in which twenty-five or more persons are employed must be provided with outside fire-proof ladders or stairways. As is seen from Table XVII, all but six of the bakeries three or more stories high are so provided. In each of these six establishments less than twenty-five persons are employed.

In Table XVIII, the large excess of the number of stairways over the number of fire-escapes is due to the fact that less than

one per cent of all work-rooms—as shown in Table XIV—are above the second floor.

TABLE XIX—NUMBER OF BUILDINGS HAVING ELEVATORS, AND NUMBER OF ELEVATORS IN BAKERIES AND CONFECTIONERIES.

Classification.	Buildings.		Elevators.	
	No.	Per cent.	No.	Per cent.
In Milwaukee	20	40.8	25	45.5
Outside Milwaukee	29	59.2	30	54.5
Total	49	100.0	55	100.0

TABLE XX—KIND OF DOORS USED ON ELEVATORS.

Classification.	In Milwaukee.		Outside Milwaukee.		Total.	
	No.	Per ct.	No.	Per ct.	No.	Per ct.
Automatic doors	7	28.0	4	13.3	11	20.0
Swinging doors	1	4.0	3	10.0	4	7.3
Sliding doors	8	32.0	10	33.3	18	32.7
Not reported	9	36.0	13	43.4	22	40.0
Total	25	100.0	30	100.0	55	100.0

The number of buildings having elevators is very small, as would be expected from the fact that very few of the buildings occupied by bakeries are of more than two stories in height. A slightly larger number of sliding doors than of other kinds was found on the elevators inspected.

TABLE XXI—BAKERIES AND CONFECTIONERIES CLASSIFIED ACCORDING TO SANITARY CONDITION OF ROOMS OCCUPIED.

Classification.	In Milwaukee.		Outside Milwaukee.		Total.	
	No.	Per cent.	No.	Per cent.	No.	Per cent.
In good condition	289	76.9	391	84.5	680	81.0
In bad condition	84	22.3	70	15.1	154	18.4
Condition not specified	3	0.8	2	0.4	5	0.6
Total	376	100.0	463	100.0	839	100.0

Of all bakeries inspected, 18% or nearly one-fifth were found to be in an insanitary condition. The percentage was somewhat larger in Milwaukee than outside that city. Of the establishments reported as in a generally good condition, a large number were nevertheless found to require certain changes in the direction of better sanitation, as will be noted in Table XXIX, containing the orders issued by the inspector.

TABLE XXII—BAKERIES AND CONFECTIONERIES CLASSIFIED ACCORDING TO FREQUENCY OF PAINTING OR WHITEWASHING INTERIOR.

Classification.	In Milwaukee.		Outside Milwaukee.		Total.	
	No.	Per cent.	No.	Per cent.	No.	Per cent.
Every three months *	2	0.5	1	.2	3	0.4
Every four months	7	1.9	2	0.4	9	1.1
Every six months	295	63.0	303	65.5	598	64.1
Once every year	43	10.2	71	15.3	109	13.0
Once every two years	1	.3	1	0.2	2	0.2
Never	7	1.9	13	3.9	25	2.9
Not specified	86	22.3	67	14.5	153	18.3
Total	33	100.0	463	100.0	839	100.0

* One establishment in Milwaukee whitewashes every two months.

It is apparent from Table XXII that over 65%, or nearly two-thirds, of all bakeries inspected comply with the law requiring walls to be whitewashed at least as often as once in six months. A substantial improvement is to be noted in this particular over the conditions existing two years ago when less than 38% of the establishments inspected were found to be complying with this law.

TABLE XXIII—ESTABLISHMENTS CLASSIFIED ACCORDING TO SANITARY CONDITION OF UTENSILS.

Establishments having utensils—	In Milwaukee.		Outside Milwaukee.		Total.	
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
In good condition	333	88.6	427	92.2	760	90.6
In bad condition	26	6.9	26	5.6	52	6.2
Conditions not specified ..	17	4.5	10	2.2	27	3.2
Total	376	100.0	463	100.0	839	100.0

It is evident from Table XXIII that over nine-tenths of all establishments are careful to keep their utensils in a sanitary condition. Of the establishments which violated the law in this respect, an equal number were located in Milwaukee and outside that city.

TABLE XXIV—BAKERIES AND CONFECTIONERIES CLASSIFIED AS TO KIND OF FLOORS.

Establishments having.	In Milwaukee.		Outside Milwaukee.		Total.	
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
Wood floors	323	85.9	402	86.8	725	86.4
Cement floors	34	9.0	29	6.3	63	7.5
Wood and cement floors ...	15	4.0	6	1.3	21	2.5
Brick floors	2	.5	4	.9	6	.7
Stone floors	1	.3	.....	.....	1	.1
Kind not specified	1	.3	22	4.7	23	2.8
Total	376	100.0	463	100.0	839	100.0

The bakery inspection law requires that rooms used for the manufacture of bakery products shall have smooth floors constructed of wood, cement, or tile laid in cement. According to Table XXIV, over five-sixths of all floors are of wood. In 48 establishments, according to Table XXIX, the floors were found to be in such condition as to necessitate the construction of new ones.

TABLE XXV—BAKERIES AND CONFECTIONERIES HAVING INSIDE CLOSETS CLASSIFIED ACCORDING TO NUMBER OF CLOSETS.

Establishments having—	In Milwaukee.		Outside Milwaukee.		Total.	
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
One closet	93	46.8	121	70.3	214	57.7
Two closets	64	32.1	38	22.1	102	27.5
Three closets	26	13.1	8	4.8	34	9.2
Four closets	8	4.0	3	1.7	11	2.9
Five or more closets*	8	4.0	2	1.1	10	2.7
Total	199	100.0	172	100.0	371	100.0

* Two establishments in Milwaukee have 13 inside closets and one has 15. One establishment outside Milwaukee has 6 closets and one has 7.

TABLE XXVI—BAKERIES AND CONFECTIONERIES HAVING OUTSIDE CLOSETS CLASSIFIED ACCORDING TO NUMBER OF CLOSETS.

Establishments having—	In Milwaukee.		Outside Milwaukee.		Total.	
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
One closet *	51	77.3	261	87.0	312	85.2
Two closets	15	22.7	39	13.0	54	14.8
Total	66	100.0	300	100.0	366	100.0

* Three establishments in Milwaukee and two outside Milwaukee have an inside and outside closet each. One in Milwaukee has 4 inside and 1 outside and one has 2 of each. One outside Milwaukee has 2 inside and 1 outside closet.

TABLE XXVII—BAKERIES AND CONFECTIONERIES HAVING CLOSETS CLASSIFIED AS TO NUMBER OF CLOSETS.

Establishments having—	In Milwaukee.		Outside Milwaukee.		Total.	
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
One closet *	140	54.1	371	80.5	511	71.0
Two closets	78	30.1	77	16.7	155	21.5
Three closets	26	10.0	8	1.7	34	4.7
Four closets	7	2.7	3	.6	10	1.4
Five or more closets	8	3.1	2	.5	10	1.4
Total	259	100.0	461	100.0	720	100.0

* See note under last table.

Tables XXV—XXVII afford an idea of the nature of the toilet facilities provided by the bakeries of the state for their employees. The law stipulates that toilet facilities shall be ample, and that no closet shall be within or communicate directly with any work-room of a bakery. In Milwaukee a large majority of the closets are within the buildings occupied, but a majority of those in other cities of the state are outside.

TABLE XXVIII—NUMBER OF ESTABLISHMENTS USING STEAM POWER, NUMBER OF BOILERS INSURED, AND AVERAGE EXPERIENCE OF ENGINEER.

Classification.	Firms having steam boilers.	Boilers.				Average no. years experience of engineer.
		No.	Total h. p.	No. insured	No not insured.	
In Milwaukee	11	16	889	14	3	19
Outside Milwaukee	5	5	287	3	2	14
Total	16	21	1,176	17	4	33

The above table shows that 16 of the establishments inspected use steam power, having from one to two boilers each. Over four-fifths of all the boilers are insured.

TABLE XXIX—NUMBER OF ORDERS ISSUED FROM JULY 1, 1904, TO OCT. 31, 1906.

Classification of orders	Orders issued.	
	Number	Per cent.
Whitewashing	174	19.6
Sanitation in general	144	16.2
Painting	49	5.5
New floor	43	5.4
New ceiling	9	1.0
Papering	4	0.5
Cleaning furniture	35	3.6
Cleaning utensils	52	5.9
Clean clothes for workmen	11	1.2
New side walls	9	1.0
New sink	20	2.2
Removing shop from basement	1	0.1
Guarding machinery	2	0.2
Plastering	9	1.0
New trough	4	0.5
Guard on elevator	4	0.5
Improving toilet facilities	47	5.3
Other orders	220	24.3
Total	892	100.0

Table XXIX shows the changes ordered by the inspector during the period covered by this report. For the 839 establishments inspected, a total of 892 orders were issued, an average of more than one to each establishment. The greater number of the orders related to whitewashing or printing the

walls of the work-rooms, improving the general sanitary conditions of the rooms, and cleaning the furniture and utensils used. All orders issued were enforced.

Although the value of the bakery inspection law has been demonstrated during the period of its existence, it has been found to be defective in certain particulars, and efforts are at present being made to amend it in such a manner as to increase its efficiency. If these efforts prove successful, the law can hardly fail to be regarded as one of the most efficacious statutes for guarding the health of the people of the state.

FREE EMPLOYMENT OFFICES.

The first free employment offices in Wisconsin were established pursuant to chapter 420 of the laws of 1901 which provided for such offices in each city having a population exceeding thirty thousand. This act applied only to Milwaukee and Superior at which places state employment offices were established. In 1903 the above law was repealed and a new law, chapter 434, laws of 1903, was enacted authorizing the establishment of four free employment offices in such cities as were determined upon by a state commission. In addition to those already opened at Milwaukee and Superior, offices were established under this law at La Crosse and Oshkosh. The following tables show the number of applications for employment and for help, both for males and females and the disposition of such application at each of the state employment offices for the year ending June 30, 1905, and June 30, 1906, a summary of the work of each office during the biennial period and a summary of the work of the four offices during that period. As the office at Oshkosh was not opened until November, 1904, the first report from that city is for only 32 weeks of the year ending June 30, 1905.

ANNUAL REPORT OF THE MILWAUKEE OFFICE FOR THE YEAR
ENDING JUNE 30, 1905.

Classification of positions.	Number of applica- tions filed.		Number of positions filled.	Number of applica- tions unfilled.	
	For em- ployment.	For help.		For em- ployment.	For help.
Males:					
Agents	23	28	28		
Apprentices	10	10	10		
Bakers	4	4	4		
Barbers	1	1	1		
Barnmen	63	68	63		
Bartenders	8	7	7	1	
Bellboys	9	9	9		
Blacksmiths	15	15	15		
Busboys	4	4	4		
Cabinet makers	7	7	7		
Carpenters	80	98	80		18
Cash boys	1	1	1		
Choremen	43	43	43		
Clerks	11	10	10	1	
Coachmen	9	9	9		
Cooks	9	9	9		
Delivery men	19	19	19		
Dishwashers	30	30	30		
Distributors	29	29	29		
Elevator operators	7	6	6	1	
Engineers	9	8	8	1	
Electricians	1	1	1		
Factory hands	274	290	274		16
Farm hands	443	496	443		53
Finishers	7	7	7		
Firemen	12	12	12		
Foremen	1	1	1		
Hostlers	15	15	15		
Janitors	15	15	15		
Kitchenmen	8	8	8		
Laborers	2,086	2,086	2,086		
Laundrymen	1	1	1		
Locksmiths	2	2	2		
Machinists	11	8	8	3	
Machinists' helpers	1	1	1		
Messengers	44	45	44		1
Millwrights	1	1	1		
Molders	3	3	3		
Oilers	1	1	1		
Office boys	10	10	10		
Packers	2	2	2		
Painters	6	6	6		
Pan washers	1	1	1		
Pattern makers	1	1	1		
Pin boys	12	12	12		
Porters	54	53	53	1	
Press hands	1	1	1		
Shipping clerks	1	1	1		
Shoemakers	1	1	1		
Steamfitters	17	17	17		
Stenographers	2	2	2		
Tailors	1	1	1		
Teamsters	143	143	143		
Tinsmiths	3	3	3		
Waiters	15	15	15		

ANNUAL REPORT OF THE MILWAUKEE OFFICE FOR THE YEAR
ENDING JUNE 30, 1905—Continued.

Classification of positions.	Number of applica- tions filed.		Number of positions filled.	Number of applica- tions unfilled.	
	For em- ployment.	For help.		For em- ployment.	For help.
Males—Continued.					
Watchmen	2	2	2	.....	.....
Woodmen	1	1	1	.....	.....
Yardmen	2	2	2	.....	.....
Total	3,602	3,682	3,594	8	88
Females:					
Bookbinders	2	2	2	.....	.....
Chambermaids	77	77	77	.....	.....
Clerks	5	5	5	.....	.....
Cooks	91	99	91	.....	8
Diningroom girls	226	263	226	.....	37
Dishwashers	49	43	48	1	.....
Domestics	259	365	299	.....	66
Factory girls	17	17	17	.....	.....
Housekeepers	4	4	4	.....	.....
Kitchen girls	206	213	206	.....	7
Laundresses	32	33	31	1	2
Nurses	4	4	4	.....	.....
Pantry girls	33	33	33	.....	.....
Scrubwomen	70	73	70	.....	3
Seamstresses	2	2	2	.....	.....
Total	1,117	1,233	1,115	2	123

ANNUAL REPORT OF THE MILWAUKEE OFFICE FOR THE YEAR
ENDING JUNE 30, 1906.

Classification of positions.	Number of applica- tions filed.		Number of positions filled.	Number of applica- tions unfilled.	
	For em- ployment.	For help.		For em- ployment.	For help.
Males:					
Agents	25	25	25	.....	.....
Apprentices	36	36	36	.....	.....
Attendants	5	5	5	.....	.....
Bandsawyer	1	1	1	.....	.....
Barber	1	1	1	.....	.....
Barnmen	104	104	104	.....	.....
Bartenders	5	5	5	.....	.....
Bellboys	24	24	24	.....	.....
Blacksmiths	23	22	23	.....	.....
Boiler makers	3	3	3	.....	.....
Bottle washers	6	6	6	.....	.....
Buggy washers	3	3	3	.....	.....
Busboys	10	10	10	.....	.....
Butchers	3	3	3	.....	.....
Cabinet maker	1	1	1	.....	.....

ANNUAL REPORT OF THE MILWAUKEE OFFICE FOR THE YEAR
ENDING JUNE 30, 1906—Continued.

Classification of positions.	Number of applica- tions filed.		Number of positions filled.	Number of applica- tions unfilled.	
	For em- ployment.	For help.		For em- ployment.	For help.
Males—Continued.					
Carpenters	127	127	127		
Choremén	93	93	93		
Clerks	14	14	14		
Coachmen	2	2	2		
Cooks	40	40	40		
Coppersmith	1	1	1		
Delivery men	36	36	36		
Derrick men	2	2	2		
Dishwashers	54	54	54		
Distributors	95	95	95		
Electricians	2	2	2		
Elevator operators	11	11	11		
Engineers	3	3	3		
Factory hands	277	277	277		
Farm hands	456	430	456		24
Finishers	4	4	4		
Firemen	25	25	25		
Foundrymen	3	3	3		
Guide	1	1	1		
Harvest hands	19	19	19		
Hostlers	6	6	6		
Hotel clerks	1	1	1		
Iron workers	9	9	9		
Janitors	25	25	25		
Joiners	1	1	1		
Kitchenmen	27	27	27		
Laborers	4,539	4,559	4,539		20
Lamplighters	2	2	2		
Lathers	4	4	4		
Locksmith	3	3	3		
Lunch counter men	1	1	1		
Machinists	12	12	12		
Machinists' helpers	7	7	7		
Masons	1	1	1		
Messengers	30	30	30		
Millwrights	4	4	4		
Molders	5	5	5		
Mounters	2	2	2		
Office boys	14	14	14		
Painters	43	43	43		
Pan washers	25	25	25		
Pin boys	18	18	18		
Porters	145	145	145		
Roofers	5	5	5		
Shipping clerks	3	3	3		
Steamfitters	21	21	21		
Stenographers	1	1	1		
Stockmen	2	2	2		
Street pavers	1	1	1		
Teamsters	203	203	203		
Tinsmiths	3	3	3		
Truckmen	112	112	112		
Varnishers	9	9	9		
Wagonmakers	1	1	1		
Waiters	29	29	29		

ANNUAL REPORT OF THE MILWAUKEE OFFICE FOR THE YEAR
ENDING JUNE 30, 1906—Continued.

Classification of positions.	Number of applica- tions filed.		Number of positions filled.	Number of applica- tions unfilled.	
	For em- ployment.	For help.		For em- ployment.	For help.
Males—Continued.					
Watchmen	6	6	6		
Weighers	2	2	2		
Window cleaners	5	5	5		
Woodmen	38	33	33		
Wood turners	2	2	2		
Yardmen	6	6	6		
Total	6,898	6,942	6,898		44
Females:					
Agents	1	1	1		
Bookkeeper	1	1	1		
Chambermaids	75	75	75		
Clerks	5	5	5		
Cooks	97	97	97		
Diningroom girls	232	238	232		6
Dishwashers	99	99	99		
Domestics	245	317	245		72
Factory girls	40	40	40		
Forelady	1	1	1		
Housekeepers	14	14	14		
Kitchen girls	242	247	242		5
Laundresses	29	29	29		
Nurses	24	24	24		
Pantry girls	42	42	42		
Scrubwomen	119	119	119		
Stenographer	1	1	1		
Total	1,267	1,350	1,267		83

ANNUAL REPORT OF THE SUPERIOR OFFICE FOR THE YEAR ENDING
JUNE 30, 1905.

Classification of positions.	Number of applica- tions filed.		Number of positions filled.	Number of applica- tions unfilled.	
	For em- ployment.	For help.		For em- p-loyment.	For help.
Males:					
Barnmen	12	16	12		4
Bellboys	2	3	2		1
Blacksmiths	11	13	11		2
Carpenters	94	100	94		6
Cooks	14	18	14		4
Engineer	1	1	1		
Factory hands	16	20	16		4
Farm hands	6	7	6		1
Harvesters	181	181	181		
Hotel clerks	1	1	1		

ANNUAL REPORT OF THE SUPERIOR OFFICE FOR THE YEAR ENDING
JUNE 30, 1905—Continued.

Classification of positions.	Number of applica- tions filed.		Number of positions filled.	Number of applica- tions unfilled.	
	For em- ployment.	For help.		For em- ployment.	For help.
Males—Continued.					
Janitor	1	1	1		
Labors	2,887	2,887	2,887		
Machinists	2	2	2		
Millwrights	4	5	4		1
Painters	2	3	2		1
Pan washer	1	1	1		
Porters	39	45	39		6
Solicitors	2	2	2		
Stockmen	7	8	7		1
Teamsters	9	10	9		1
Watchman	1	1	1		
Total	3,293	3,325	3,293		2
Females:					
Chambermaids	34	41	34		7
Cooks	45	73	45		33
Diningroom girls	133	159	133		26
Domestics	319	605	319		286
Housekeepers	2	2	2		
Kitchen girls	146	173	146		27
Laundry girls	3	3	3		
Nurse girls	23	33	23		9
Pantry girl	1	1	1		
Saleslady	1	1	1		
Scrub girls	6	8	6		2
Total	714	1,103	713		390

ANNUAL REPORT OF THE SUPERIOR OFFICE FOR THE YEAR ENDING
JUNE 30, 1906.

Classification of positions.	Number of applica- tions filed.		Number of positions filled.	Number of applica- tions unfilled.	
	For em- ployment.	For help.		For em- ployment.	For help.
Males:					
Blacksmiths	25	31	25		6
Bell boys	21	26	21		5
Barnmen	40	48	40		8
Bridgemen	24	35	24		11
Bricklayers	2	4	2		2
Bookkeepers	3	4	3		1
Cooks	31	46	31		15
Carpenters	206	226	206		20
Chore boys	8	8	8		
Cooks	2	2	2		

ANNUAL REPORT OF THE SUPERIOR OFFICE FOR THE YEAR ENDING
June 30, 1906—Continued.

Classification of positions.	Number of applica- tions filed.		Number of positions filled.	Number of applica- tions unfilled.	
	For em- ployment.	For help.		For em- ployment.	For help.
Carriage washer	1	1	1		
Dairymen	5	5	5		
Engineers	7	7	7		
Farm hands	71	91	71		
Factory hands	113	116	113		20
					3
Firemen	2	2	2		
Harvesters	423	423	423		
Janitors	3	3	3		
Laborers	3,233	3,233	3,233		
Millwrights	6	7	6		1
Machinists	11	13	11		2
Mill men	9	13	9		3
Moulder	1	1	1		
Porters	44	51	44		7
Pan washers	11	13	11		2
Stockmen	9	12	9		3
Solicitors	5	5	5		
Teamsters	53	53	53		
Watchmen	2	2	2		
Total, 53 weeks	4,371	4,490	4,371		109
Females:					
Chambermaids	112	134	112		22
Cooks	67	129	67		62
Domestics	381	726	381		345
Dining room girls	179	237	179		58
Housekeepers	8	8	8		
Kitchen girls	182	211	182		29
Laundresses	10	10	10		
Nurses	6	3	6		2
Pantry girls	7	7	7		
Seamstresses	13	13	13		
Saleslady	1	1	1		
Solicitors	3	3	3		
Scrub girls	21	22	21		1
Washwomen	2	2	2		
Total, 53 weeks	992	1,511	992		519

ANNUAL REPORT OF THE LA CROSSE OFFICE FOR THE YEAR ENDING
JUNE 30, 1905.

Classification of positions.	Number of applica- tions filed.		Number of positions filled.	Number of applica- tions unfilled.	
	For em- ployment.	For help.		For em- ployment.	For help.
Males:					
Agents	7	14	7		7
Apprentices	9	4	4	9	
Barnmen	4	6	3		4
Berry pickers	2	2	2	6	
Blacksmiths	8				
Butchers	2	20	2		18
Cabinet makers	1	25	1		24
Carpenters	53	72	54	2	18
Cement men	1	1	1		
Clerks	31	1	1	30	
Chimney sweeper	1	1	1		
Chore-men	13	13	13		
Coachmen	1	1	1		
Cooks	3	3	3		
Delivery men and boys..	22	15	15	7	
Dishwashers	1	1	1		
Factory hands	13	18	13		
Farm hands	76	107	76		31
Hostlers	5	5	5		
Janitor	1	1	1		
Laborers	709	713	709	60	4
Machinists	4			4	
Nurse	1	1	1		
Painters	44	17	17	27	
Paper hangers	1	1	1		
Planing mill men	2	2	2		
Plasterers	1	7	1		6
Porters	3	3	3		
Shoemakers	2			2	
Snow shovellers	15	15	15		
Steam fitters	2	1	1	1	
Tannerymen	4	4	4		
Teamsters	98	88	88	10	
Trackmen	4	4	4		
Waiters	1	1	1		
Well drillers		4			4
Watchmen	12			12	
Wood choppers	15	15	15		
Wood finishers	2	2	2		
Wood sawyers	42	42	42		
Yard men	11	11	11		
Total	1,295	1,241	1,125	170	116
Females:					
Agents	2	2	2		
Chambermaids	15	15	15		
Clerks	32	1	1	31	
Cooks	13	13	13		
Diningroom girls	22	23	22		1
Domestics	256	302	254	3	48
Factory girls	97	106	88	9	18
Housekeepers	5	3	3	2	
Kitchen girls	15	16	15		1
Laundresses	4	4	4		

FREE EMPLOYMENT OFFICES.

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ANNUAL REPORT OF THE LA CROSSE OFFICE FOR THE YEAR ENDING
JUNE 30, 1905—Continued.

Classification of positions.	Number of applica- tions filed.		Number of positions filled.	Number of applica- tions unfilled.	
	For em- ployment.	For help.		For em- ployment.	For help.
Females—Continued.					
Nurses	8	8	8		
Scrubwomen	58	62	53		4
Seamstresses	3	7	3		4
Stenographers	20			20	
Waiters	5	5	5		
Washwomen	25	25	25		
Total	580	592	513	64	73

ANNUAL REPORT OF THE LA CROSSE OFFICE FOR THE YEAR ENDING
JUNE 30, 1906.

Classification of positions.	Number of applica- tions filed.		Number of positions filled.	Number of applica- tions unfilled.	
	For em- ployment.	For help.		For em- ployment.	For help.
Males:					
Agents	8	8	8		
Barn man	1	1	1		
Bell boys	2	2	2		
Blacksmith	1	1	1		
Bricklayers	12	12	12		
Carpenters	44	44	44		
Canvassers	1	1	1		
Choremen	6	6	6		
Clerk	1	1	1		
Coachman	1	1	1		
Cooks	6	6	6		
Deliverymen	13	13	13		
Engineer	1	1	1		
Farm hands	62	66	62		4
Factory hands	123	129	128		1
Hack man	1	1	1		
Janitors	3	3	3		
Laborers	1,388	1,093	1,988		5
Office boy	1	1	1		
Painters	14	15	14		1
Panwasher	1	1	1		
Porters	3	3	3		
Section hands	3	3	3		
Stone cutters	2	2	2		
Stone masons	1	1	1		
Teamsters	30	30	30		
Tinner	1	1	1		
Truck men	3	3	3		
Wood sawyers	9	9	9		
Wood choppers	12	12	12		
Yard men	12	12	12		
Total	1,471	1,482	1,471		11

ANNUAL REPORT OF THE LA CROSSE OFFICE FOR THE YEAR ENDING
JUNE 30, 1906—Continued.

Classification of positions.	Number of applica- tions filed.		Number of positions filled.	Number of applica- tions unfilled.	
	For em- ployment.	For help.		For em- ployment.	For help.
Females:					
Agents	2	2	2		
Chambermaids	12	12	12		
Cooks	11	11	11		
Diningroom girls	26	26	26		
Dishwashers	5	5	5		
Domestics	243	423	243		180
Factory hands	71	77	71		6
Housekeepers	5	5	5		
Kitchen girls	36	36	36		
Laundresses	3	3	3		
Nurses	4	4	4		
Scrub women	69	69	69		
Solicitors	4	4	4		
Washwomen	41	41	41		
Waitresses	7	7	7		
Total	544	730	544		180

ANNUAL REPORT OF THE OSHKOSH OFFICE FOR THE YEAR ENDING
JUNE 30, 1905.

Classification of positions.	Number of applica- tions filed.		Number of positions filled.	Number of applica- tions unfilled.	
	For em- ployment.	For help.		For em- ployment.	For help.
Males:					
Agents	8	8	8		
Bartenders	1	1	1		
Bell boys	2	2	2		
Blacksmiths	2	2	2		
Butchers	3	3	3		
Carpenters	10	10	10		
Clerks	10	10	10		
Deliverymen	3	3	3		
Engineers	1	1	1		
Factory hands	132	132	132		
Farm hands	42	42	42		
Janitor	1	1	1		
Laborers	100	100	100		
Loggingcamp laborers	17	17	17		
Machinists	16	16	16		
Messengers	1	1	1		
Mill-wrights	1	1	1		
Painters	2	2	2		
Salesmen	1	1	1		
Sawyers	2	2	2		

ANNUAL REPORT OF THE OSHKOSH OFFICE FOR THE YEAR ENDING
JUNE 30, 1905—Continued.

Classification of positions.	Number of applica- tions filed.		Number of positions filled.	Number of applica- tions unfilled.	
	For em- ployment.	For help.		For em- ployment.	For help.
Males—Continued.					
Snow shovellers	22	23	22		
Stenographers	1	1	1		
Teamsters	1	1	1		
Yardmen	12	12	12		
Total	441	441	441		
Female:					
Agents	1	1	1		
Chambermaid	1	1	1		
Clerks	1	1	1		
Cooks	14	14	14		
Diningroom girls	22	22	22		
Domestics	162	162	162		
Factory girls	14	14	14		
Housekeepers	12	12	12		
Kitchen girls	22	22	22		
Laundry girls	1	1	1		
Nurses	6	6	6		
Scrubwomen	16	16	16		
Seamstress	1	1	1		
Tailor	1	1	1		
Washwomen	19	19	19		
Total	293	293	293		

ANNUAL REPORT OF THE OSHKOSH OFFICE FOR THE YEAR ENDING
JUNE 30, 1906.

Classification of positions.	Number of applica- tions filed.		Number of positions filled.	Number of applica- tions unfilled.	
	For em- ployment.	For help.		For em- ployment.	For help.
Males:					
Agents	4	4	4		
Attendants	67		67		
Baker	1	1	1		
Blacksmiths	4	4	4		
Cabinet makers	2	2	2		
Canvassers	24	24	24		
Carpenters	19	23	19		4
Clerks	5	5	5		
Chore boys	3	3	3		
Coachmen	7	7	7		
Cooks	4	4	4		
Delivery drivers	3	3	3		
Diggers	14	14	14		
Distributors	4	4	4		
Engineer	1	1	1		

ANNUAL REPORT OF THE STATISTICAL OFFICE FOR THE YEAR ENDING
JUNE 30, 1936—Continued.

Classification of positions.	Number of applica- tions filed.		Number of positions filled.	Number of applica- tions unfilled.	
	For em- ployment.	For help.		For em- ployment	For help.
Males—Continued.					
Factory hands	249	249	249		
Farm hands	88	88	88		
Firemen	2	2	2		
Gardeners	2	2	2		
Hostler	1	1	1		
Janitors	2	2	2		
Laborers	512	512	512		
Loaders	4	4	4		
Machinists	18	18	18		
Machinists' helpers	5	5	5		
Moulders	6	6	6		
Motor men	2	2	2		
Office boys	2	2	2		
Painters	20	20	20		
Salesmen	2	2	2		
Sawfler	1	1	1		
Solicitors	3	3	3		
Steamfitters	3	3	3		
Stenographer	1	1	1		
Surveyor	1	1	1		
Tailor	1	1	1		
Teams and teamster	2	2	2		
Teamsters	3	3	3		
Watchman	1	1	1		
Whitewashers	1	1	1		
Upholsterers	4	4	4		
Yardmen	22	22	22		
Total 52 weeks	1,125	1,129	1,125		4
Females:					
Attendants	3	3	3		
Canvassers	4	4	4		
Chambermaids	5	5	5		
Clerks	3	3	3		
Cooks	32	32	32		
Diningroom girls	42	42	42		
Dishwashers	3	3	3		
Domestics	376	394	376		18
Factory girls	23	28	28		
House keepers	21	21	21		
Kitchen girls	46	46	46		
Laundry girls	2	2	2		
Nurses	13	13	13		
Nurse girls	2	2	2		
Scrubwomen	55	55	55		
Stenographer	1	1	1		
Washwomen	28	28	28		
Total 52 weeks	664	682	664		18

SUMMARY OF THE FOUR OFFICES FOR YEAR ENDING JUNE 30, 1905.

Classification of positions.	Number of applications filed.		Number of positions filled.	Number of applications unfilled.	
	For employment.	For help.		For employment.	For help.
Males:					
Milwaukee office	3,602	3,652	3,594	8	58
Superior office	3,393	3,325	3,293	.....	32
La Crosse office	1,395	1,241	1,135	170	116
Oshkosh office	441	441	411	.....	.....
Total	8,631	8,689	8,453	178	236
Females:					
Milwaukee office	1,117	1,233	1,115	2	123
Superior office	713	1,103	713	.....	390
La Crosse office	580	592	516	64	76
Oshkosh office	293	293	293	.....	.....
Total	3,703	3,226	2,637	66	589

SUMMARY OF FOUR OFFICES FOR YEAR ENDING JUNE 30, 1906.

Classification of positions.	Number of applications filed.		Number of positions filled.	Number of applications unfilled.	
	For employment.	For help.		For employment.	For help.
Males:					
Milwaukee office	6,898	6,942	6,898	.....	44
Superior office	4,371	4,480	4,371	.....	109
La Crosse office	1,471	1,482	1,471	.....	11
Oshkosh office	1,125	1,129	1,125	.....	4
Total	13,865	14,033	13,865	.....	168
Female:					
Milwaukee office	1,267	1,350	1,267	.....	83
Superior office	992	1,511	992	.....	519
La Crosse office	544	730	544	.....	186
Oshkosh office	664	682	664	.....	18
Total	3,467	4,273	3,467	.....	803

SUMMARY OF FOUR OFFICES FOR BIENNIAL PERIOD ENDING JUNE 30,
1906.

Classification of positions.	Number of applica- tions filed.		Number of positions filled.	Number of applica- tions unfilled.	
	For em- ployment.	For help.		For em- ployment.	For help.
Males:					
Milwaukee office	10,500	10,624	10,492	8	132
Superior office	7,664	7,905	7,664	.....	141
La Crosse office	2,762	2,723	2,526	170	127
Oshkosh office	1,566	1,570	1,566	.....	4
Total	22,496	22,722	22,318	178	404
Females:					
Milwaukee office	2,384	2,588	2,382	2	206
Superior office	1,705	2,614	1,705	.....	909
La Crosse office	1,124	1,322	1,060	64	262
Oshkosh office	957	975	957	.....	18
Total	6,170	7,499	6,104	66	1,395
Total, males and females:					
Milwaukee office	12,884	13,212	12,874	10	338
Superior office	9,369	10,419	9,369	.....	1,050
La Crosse office	3,890	4,045	3,656	234	389
Oshkosh office	2,523	2,545	2,523	.....	22
Total	28,666	30,221	28,422	244	1,799

APPENDIX.

A CHRONICLE OF INDUSTRIAL EVENTS.

The following extracts from state newspapers pertain to events of interest to employers, workmen, or both, which occurred during the year ending October 31, 1906. The purpose of making the compilation was to collect such data as would serve as a basis for a study of the industrial conditions which existed and the changes which occurred during the year. It will become apparent that the field has not been covered so completely as to make the attainment of this end possible. The individual facts have nevertheless been considered as of sufficient interest to warrant their presentation.

Albany, March 14, 1906.—The Albany Linen Mills Co. have enlarged their plant so that the full equipment is 500 looms; 150 hands will be employed in addition to the regular force.

Appleton, January 6, 1905.—Laboring men who are married and willing to work are very much in demand in the mining camps of the north. Companies will not hire single men, but offer big inducements to married men. Average wage this year is \$2.23 against \$1.98 last year.

Appleton, November 3, 1905.—Appleton experiences a labor famine. Impossible for employers to obtain sufficient labor to carry on industrial improvements.

Appleton, January 11, 1906.—New sulphite plant of the Riverside Fibre and Paper Company is completed and ready for operation. It replaces mill destroyed by fire May last and is said to be one of the largest in United States and the best plant of its kind in the world.

Appleton, July 12, 1906.—A prominent lumberman of Appleton says laborers are very scarce. A telegram came this morning that 60 mill hands were wanted in Donald, a little town on the Chippewa River,

and it was impossible to secure them. Reason is that many men are working in the harvest fields near here, while some have gone to North Dakota.

Appleton, Aug. 18, 1906.—Believing that his employees were going out on a strike this morning, George Smith, the largest cigar manufacturer in Neenah, discharged his entire force of 20 cigar makers last night. The girls who were stripping tobacco were told to take a vacation until other men could be secured.

The union label was used and union men were employed as in all other factories here. Mr. Smith will hire the men back again, but will retire from business before he will be dictated to or grant the demands made by his erstwhile employees.

Evening Wisconsin, May 31. Ashland, Wis.—De Fer's mill at Saxon burned to the ground, involving a loss of \$30,000. Fire throws 100 men out of employment.

Evansville Review, Aug. 16, 1906. Beloit News.—Sixty men are working for the Rock County Cigar Company in Janesville, installing new machinery, cleaning up the factory and getting ready for the large amount of beets to be brought in this fall and winter.

Beloit Daily Free Press, Sept. 15, 1906.—The Warner Instrument Company will build a new factory in South Beloit. Their business has outgrown their present accommodations. The Warners expect to have about 100 persons employed in the new shops when completed.

Brodhead, January 25, 1906.—The American Cigar Company's plant is in full operation, employing over 100 hands.

Chippewa Falls, November 14, 1905.—A new furniture company has been formed. The management is composed of the leading business men of the town. The plant will give employment to about 75 skilled laborers.

Chippewa Falls, December 20, 1905.—A large crew is going from here to work on the line of the Wisconsin Central, building from Owen to Superior. Company is paying as high as \$2.00 a day for men. The work is to continue throughout the winter.

Cudahy, March 5, 1906.—Power and Mining Co. began erection of an addition to its plant, costing \$300,000. This added 300 men to the laboring force.

De Pere, November 8, 1905.—Work begun on a large addition to the Kidney Boat Factory. Additional machinery to be placed in the plant, necessitating a larger working force.

De Pere, January 3, 1906.—The Western Steel and Iron Works, capitalized at \$400,000, are moving their plant from Green Bay to this place. About 15 hands will be employed at the start, on January 6, 1906.

De Pere, January 26, 1906.—The Burns Boiler & Manufacturing Company's plant is to remain in De Pere and capital stock is increased from \$100,000 to \$200,000, \$25,000 of which is subscribed locally. Foundry will be enlarged and other improvements made as soon as possible and company will give employment to 150 hands, which number will be steadily increased.

Milwaukee Free Press, August 6, 1906. Dodgeville, Wis.—The new 50-ton concentrating mill at the McKinley mines, two miles east of this city, has commenced operation. The construction of the building took 65,000 feet of lumber and 325 barrels of cement. It will take 50 men to keep the mill running at its full capacity.

Eau Claire, December 2, 1905.—The factory of the Mussen-McLaren Shoe Co., recently sold to Mr. Phillips, of Duluth, is being moved to that place. Factory gave employment to 50 employees and its loss will be keenly felt.

Eau Claire Leader, July 19, 1906.—There was a short strike of the employees of the two ice companies Monday that resulted in the demands of the men being granted.

They wanted an increase in wages of from \$1.75 to \$2.00 per day. The \$2.00 wage was granted. Should these wages be demanded next year, the price of ice will be raised.

Eau Claire, September 18, 1906.—The Lange Canning Factory at Eau Claire employs a large number of men and women to handle the amount of corn that is now being brought in.

Fond du Lac Commonwealth, July 10, 1906.—Nearly 10,000 building laborers who have been earning 30 cents an hour for the last three years have been granted an increase of 5 cents an hour or 40 cents per day. Caisson workers receive 50 cents an hour. The agreement was made by the Mason and Builders' association.

Fond du Lac, Wis., August 14, 1906.—Raise of wages for street car men will go into effect September 1 for the employees of the Eastern Wisconsin Railway and Light Company, in charge of both city and interurban cars. In city service, employees working for the company for the first six months will receive 15 cents an hour; second six months, 16 cents; and thereafter 17 cents an hour. On the interurban, employees will receive, under the new schedule, 17 cents an hour for the first year; 18 cents for the second; 19 cents for the third, and 20 cents thereafter.

Fond du Lac, Wis., September 26, 1906.—About fifteen men employed by Contractor J. O. Jones on the Division Street pavement went on strike. They were receiving \$2.00 per day and struck for a raise of 25 per cent, which was not granted. Four men returned for \$2.25 per day. Others are still out. The following morning the work started the same as usual, new men having been engaged to fill the places of those who struck the day previous.

Fond du Lac, December 5, 1906.—Ninety Italians, who have been employed by the Barker Asphalt Co. on the Sheboygan Street pavement work as concrete mixers, quit work Tuesday. They went to the justice of peace and said they were unable to get their pay. Papers were served on the company, but they found there was nothing upon which to base their suit. The Italians were paid the wages due them and they paid the court costs. They returned to Chicago and new men will take their places.

Glenwood, January 18, 1906.—A. J. Vander Hiden is to establish a factory for the manufacture of bolts. Will give employment to about twenty hands.

Grand Rapids, October 11, 1906.—The New Sulphite mill will be completed by the first of November and it will employ 150 men.

Wood County Times, October 18, 1906. Grand Rapids.—This afternoon 100 molders employed by the Wisconsin Engine Company went on a strike, claiming they were promised ten hours' pay for nine hours' work, which they did not get, so they all walked out.

Green Bay, April 21.—Painters and decorators of Duluth and Superior went on strike for raise in wages yesterday.

Hayward, November 14, 1905.—Diamond Match company is to put in a plant here. The new factory will give employment to about 60 hands.

Janesville, January 8, 1906.—Capital stock of the Western Shoe Co. increased from \$25,000 to \$50,000. Output is to be doubled and company will give employment to a force of 40 or 50 men.

Janesville, February 16, 1906.—The Rock County Sugar Company's factory closed its factory for the season. The 54,000 tons of sugar beets delivered during the year have yielded 12,637,029 pounds of sugar. Four hundred laborers were employed during the season.

Janesville Gazette, July 11, 1906.—Janesville Sash & Door Co. employ 80 men but are unable to put out all the work they receive orders for and are forced to sublet some of it.

Kenosha, November 1, 1905.—Wisconsin State Federation of Women's Clubs held convention at Kenosha and adopted resolutions asking Congress to provide for an investigation by a bureau of experts of conditions under which women wage earners in the country work and the reason for the rapid increase in women workers.

Kenosha, November 31, 1905.—Contractors of the city are to form a union or association for the purpose of purchasing their building material at lower rates.

Over 300 men and women are employed in the gathering of the cabbage crop which is one of the largest crops raised in this vicinity.

Kenosha, May 3, 1906.—Bakers of this city declined to work Wednesday night and are on strike. They want higher wages. The action of the men did not affect the supply of bread and pastry as the bosses took the places of strikers, and will for an indefinite time. They say they will not raise wages.

Kenosha, May 14, 1906.—A large force of about 400 section laborers on the new spur of the Chicago & Northwestern Ry., about two miles from here, have struck. They demand an increase in wages of 25 cents per day. It is thought that new men will take their places.

Kenosha, June 1.—Twelve men who controlled the delivery of ice here went on a strike this morning; wagons of the two companies remained in the yards and many people went without ice. It is thought that their wages will be increased. Knickerbocker Co.

Kenosha, June 5.—Three new factories have been given sites in the city and will operate as soon as possible,—concrete block factory, piano factory, necktie factory. These will give employment to about 500 men.

The Telegram Courier, Kenosha, August 23, 1906.—Ground is broken here for a big plant for Marshall Ventilating Mattress Co., in Kenosha. Will manufacture cushions, seats, mattresses, etc. With the opening of the plant about 75 men will be employed.

La Crosse, November 2, 1905.—About 20 employees of the La Crosse Rubber mills walked out. Said to be a sympathetic strike, because one of their number was discharged.

La Crosse, November 2, 1905.—All of the electricians and linemen of the four telephone companies centering at La Crosse struck for recognition of the union. Companies are paying union scale and working union hours and the question of the open shop is the point at issue. Wisconsin Telephone Co. and La Crosse Telephone Companies completely tied up.

La Crosse, November 2, 1905.—Crew of the rafter Ravenna will not work in cold weather, so half of them struck at Winona and the rest at La Crosse. Others were secured after considerable delay.

La Crosse, November 3, 1905.—La Crosse Rubber Co. again running with full force. New men were secured to fill the places of the strikers, none of whom will be taken back.

La Crosse, November 3, 1905.—Three dozen men secured employment at the Wisconsin Free Employment Bureau last week. Demand for labor is large, orders for men have piled up, but still the working classes do not seek positions.

La Crosse, November 10, 1905.—Striking union electricians have secured employment with the La Crosse Interurban Telephone company. The La Crosse Telephone company has filled positions vacated by strikers, while the Wisconsin company had no difficulty in securing men immediately after the strike was declared against it.

La Crosse, November 23, 1905.—The Humane Society is taking aggressive steps towards the enforcement of the child labor law in that city.

La Crosse, December 12, 1905.—The La Crosse newspapers have all signed an eight hour scale with the Typographic Union. This action avoided a strike which was ordered for January 1, 1906.

La Crosse, December 12, 1905.—Striking union electricians have returned to work for the La Crosse and Wisconsin Telephone Companies after a strike of seven weeks which has been declared off. No concessions were made to them.

La Crosse, January 2, 1906.—A strike has been declared in job offices as a result of an attempt to enforce the eight hour day by the International Typographical Union.

La Crosse, February 8, 1906.—Cement sidewalk contractors have formed a combination to protect their interests. Prices will be raised 25 per cent, due to the increased cost of cement.

La Crosse, February 28, 1906.—An agreement to maintain uniform prices was reached by the ice dealers and arrangements made for doubling the price for the summer of 1906.

La Crosse, March 8, 1906.—Boss carpenters organized to combat demands of carpenters' union for a raise in wages on April 1, from 22 to 30 cents per hour; also double pay for Sundays.

La Crosse, March 20, 1906.—The La Crosse Building Association has been formed for the purpose of opposing any concerted action on the part of the unions.

La Crosse, May 10.—There was a strike yesterday among the carpenters who were building the high school; they demanded an increase in wages of 5 cents per hour. Their places were filled by non-union men.

La Crosse Leader Press, June 1.—Articles of incorporation were filed at Madison for the Litho Paint Sign Co. of this city, with a capital of \$25,000. Between 15 and 20 hands will be employed at the start, and more as business warrants.

La Crosse, August 4, 1906.—The La Crosse Boiler Company is having plans drawn by Schick & Roth for a new boiler plant. The erection will mean an increased labor force and the business will be conducted on a larger scale.

La Crosse Leader-Press, Aug. 29, 1906.—A strike among the men employed by Contractors Wooley & Hanson on the Caledonia Street brick paving job was on yesterday afternoon. They wanted an increase from \$1.65 to \$1.75 per day. The wages were granted and the men went back to work.

La Crosse Weekly Chronicle, October 4, 1906.—A half dozen men employed by Groff & Derr struck for a raise. They are now getting 17½ cents per hour and they asked for \$2.00 per day. Other men will be employed.

Lake Mills, March 1, 1906.—The ice houses at the head of the lakes have employed 175 men, nearly one-half of whom are from Indiana.

Madison State Journal, Aug. 25, 1906.—Ten city quarrymen went on a strike this afternoon because their foreman worked them too hard.

Madison, October 1, 1906.—An addition that will largely increase the capacity of the Northern Electrical Plant will soon be under way. When this is completed it will employ 200 more men.

Manitowoc, November 3, 1905.—The masons, who were among the number who quit work on the new court house a month ago when a disagreement arose, returned to work.

Manitowoc, January 10, 1906.—The Shipwrights' and Boilermakers' Unions try to force the Manitowoc Dry Dock Co. and the Manitowoc Steam Boiler Works to recognize the union and eight hour day. As the result of a strike these companies have been compelled to cancel contracts.

Marinette, November 18, 1905.—Sheet Metal workers organized a union. It is allied with the Marinette and Menominee Trades Council.

Marinette, December 18, 1905.—Marinette Knitting Mills is to enlarge its mill. Concern is now employing sixty hands and expects to have over a hundred before another six months.

Marinette, January 17, 1906.—International Shingle Weavers' Union, now in session at Hoquiam, Wash., elected Joseph Bolger of this city president. It was decided to open a free employment bureau in Marinette for the benefit of union men in Wisconsin and Michigan. June 1, 1907, was fixed as the date when the International Union would demand an eight hour day throughout the United States and Canada.

Marinette, July 6, 1906.—Labor is scarce and employers have to send outside the city for masons and bricklayers.

Marinette, August 16, 1906.—Menominee has landed another large factory in the Floyd Manufacturing Co., of Minneapolis, manufacturers of steel and wire novelties. The plant will be equipped with foundries and machine shops. The factory will employ from 400 to 600 men.

Marinette, August 25, 1906.—A sugar factory is to be started here. In addition to this the pickling plant of the Carpenter Cook Company was put into operation Tuesday and a force of from 20 to 30 men were employed in picking over the various vegetables. The output of this plant will be greater next year.

Marinette, September 12, 1906.—John Lindem of the Marinette Planing Mill, stated today that his company is preparing for and now has the material on the ground to double the capacity of their Marinette plant and to give employment to fully 75 additional workmen. Business of the company has increased faster than they have been able to take care of.

The Daily Eagle Star, Marinette, October 4, 1906.—A committee of the Typographical Union, having asked for a recognition of the union and shorter hours of labor and their demands being refused by the publishers of the Herald Leader and Eagle Star, the men walked out at 3 o'clock today without notice. Other help has been secured.

Marinette, October 17, 1906.—The Carpenter Cook Co., of Menominee, intend to make its preserving plant one of the largest in the country and over \$25,000 has been spent on it this year. The extensive work will not start in until next fall. It is planned to employ four or five hundred new hands in the industry.

Menasha, January 17, 1906.—On account of a reduction of 25 per cent per day in their rate of pay, fifteen men employed as single handlers at the Wisconsin Central Railway single piles, struck. The men had been getting \$1.50. Company is unable to obtain men to fill the places vacated.

Menomonie, December 15, 1905.—Machinists of the Globe Iron Works went out on a strike. Their principal demand is the abolition of the piece work system.

Milwaukee, October 31, 1905.—Printers of the city vote to donate 50 cents per week for carrying on a strike in other cities. Winter meetings being held at which the members are being taught color mixing.

Milwaukee, November 1, 1905.—Carmen employed by the Milwaukee road have reached agreement under which they obtained a raise of 5 cents per day. Hours of work remain the same.

Milwaukee, November 2, 1905.—Strike of iron workers on the plant of Allis Chalmers Co., West Allis, has not yet been settled.

One of the national officers of the Sheet Metal Workers' Union is here trying to settle the strike which has been on for many months. Several of the larger shops, which formerly employed union men, now employ non-union men.

Milwaukee, November 2, 1905.—Structural Iron Workers employed in the erection of the new Allis-Chalmers shops at West Allis struck. Trouble was caused by Mr. Oscar Daniels, who has the contract from the Allis Chalmers people, using material from the American Bridge & Iron Works, against which company there is a strike.

Milwaukee, November 2, 1905.—The Hod Carriers' Union has joined the building trades section of the Federated Trades Council. This action added great strength to the section, which also comprises the Brick Layers' and Masons' Union.

Milwaukee, November 3, 1905.—An Allis Chalmers Club has been organized by that company, to promote a social spirit among its employees and strengthen their loyalty to its interests.

Milwaukee, November 6, 1905.—The Street Railway Company is to build a belt line. Extension is of special importance to the towns of Lake, Cudahy, St. Francis and South Milwaukee. Many laborers to be employed.

Milwaukee, November 13, 1905.—Three hundred linemen employed by the Wisconsin Telephone Company went out on a strike. They were getting a graded pay of from \$2.35 to \$2.89 and demand a flat rate of \$2.75. They worked nine and one-half hours, with a Saturday half holiday and they now demand an eight and one-half hour day with a half holiday.

Milwaukee, November 23, 1905.—The construction and maintenance men of the Wisconsin Telephone Company, who struck ten days ago, have made a settlement with the company and have returned to work. Strikers gained practically every point for which they struck.

Milwaukee, November 23, 1905.—Members of the Steam Fitters' Union nominally on a strike, but all members of the union are working full time.

Milwaukee, December 6, 1905.—The English firm of N. & T. Avery Co., Ltd., of Birmingham, Eng., is to build a plant for the manufacture of scales in North Milwaukee. Plant is to employ 500 men.

Milwaukee, December 13, 1905.—Matthews Bros. Mfg. Company's plant on Fourth street, employing about four hundred men, has inaugurated the closed shop, with none but union men employed.

Milwaukee, December 26, 1905.—The Pressed Steel Plant Company has closed a deal for the purchase of the plant of the Milwaukee Electric Company for \$75,000 and will immediately begin improvements calling for the expenditure of \$50,000. The plant will employ between 350 and 400 men.

Milwaukee, January 6, 1906.—Settlement of the strike of machinists at the works of the Brown-Corliss Engine Company at Corliss may be reached today. Forty men were affected by the strike at Corliss. The union claimed that members of the organization, particularly of its local members, were discriminated against by the Company. The strikers finally settled down near the machine shops, living in tents erected on a lot belonging to one of the members of the union. This method of conducting a strike attracted attention in labor circles throughout the United States.

Milwaukee, January 12, 1906.—Employees of the Milwaukee Electric Railway and Light Company, who have been in the continuous service of the company for ten years, had wages increased one cent per hour. One hundred men were affected by the raise.

Milwaukee, January 17, 1906.—Fourteen members of the Typographical Union, employed by a local printing establishment, quit work today because it is alleged that the firm is doing printing for the state of Minnesota without a contract.

Milwaukee, January 2, 1906.—Support to the striking members of the union at the shop of the Cannon Printing Company was voted by the Milwaukee Local of the Typographical Union. A number of the strikers have secured positions with other firms.

Milwaukee, January 23, 1906.—The Hammersmith Engraving Company decided to hold an open shop. Fifteen of the union engravers quit the firm and four broke with the union.

Milwaukee, January 24, 1906.—Striking members of Typographical Union, No. 23, have been enjoined from in any way interfering with the Cannon Printing Company or any of its employees.

Milwaukee, January 25, 1906.—The fifteen engravers who had been locked out by the Hammersmith Engraving Company, returned to work after signing the open shop agreement.

Milwaukee, January 26, 1906.—All of the difficulties at the Academy of Music have been adjusted by the Building Trades' Council, and the men affected have returned to work. Trouble was caused by Plasterers' Union, No. 138, refusing to allow decorators to proceed with work which the plasterers claimed came within their jurisdiction. In this connection the plasterers were successful.

Milwaukee, January 27, 1906.—Employees of the Milwaukee Gas Light Company, who have been in the employ of the company a year, and regularly during the time were given an additional six per cent of their wages during the preceding six months. In carrying out this policy the company pensions aged employees when it is decided that they are not fit to continue longer in their employment.

Milwaukee, February 1, 1906.—Seven hundred Milwaukee painters will strike on May 1st, if the employing painters do not grant a demand for an increase of wages of five cents an hour. There are about 1,000 painters in Milwaukee, of which considerably over one-half are members of the union.

Milwaukee, February 13, 1906.—A new Waiters' Union has been formed with a membership of nearly fifty.

Milwaukee, February 13, 1906.—Local Bakers' Union vote to demand an increase in their wages, to take effect May 1st, 1906.

Milwaukee, February 16, 1906.—The stationary and hoisting engineers will follow in the wake of the painters in demanding an increased wage scale after May 1st. The present scale is fifty cents an hour. How much increase will be demanded the officers decline to disclose at present.

Milwaukee, February 26, 1906.—Several tailors in the employ of August Rohn, 264 W. Water St., went on a strike yesterday morning. The union men maintain that the reason for the strike is the fact that non-union help was hired in the shop. Mr. Rohn says it is because he refused to re-employ an incompetent tailor whom he had discharged.

Milwaukee, February 26, 1906.—Demanding an increase of 5 cents an hour in their pay, about 40 bricklayers went on a strike at the plant of the Allis-Chalmers Company, at West Allis yesterday. At the present time the men receive 50 cents an hour. The officials of the company state that an early settlement can be looked for.

Milwaukee, March 1, 1906.—The Italian laborers who went on a strike at West Allis because their hours of employment were too short, were pacified and returned to work.

Milwaukee, March 20, 1906.—Twenty coremakers of the Allis-Chalmers Company returned to work after having been on a three days' strike.

Milwaukee, March 22, 1906.—An addition to the Milwaukee Road shops has been begun. This addition, when completed, will increase the pay roll from \$325,000 to \$700,000. The increase in the car-wheel output will be from 185 to 600 per day. Over 2,000 people are now employed in the shops and the addition will employ some 4,500 additional.

Milwaukee, March 28, 1906.—About 200 section hands, employed in the Milwaukee road yards in the Menomonee Valley, and about the yards of the West Milwaukee Shops, went on a strike, demanding an increase in pay from \$1.50 to \$1.75 per day.

Milwaukee Journal, April 25, 1906.—Kenosha. The striking tanners at the Central Leather Company's plant returned to work today. There is an increase of wages of 50 cents per week. Men have dropped their demand for a three years' contract.

Milwaukee, May 2, 1906.—One thousand and two hundred molders went on a strike in Milwaukee this morning for increased wages and shorter hours. When the seven o'clock whistle blew not a man appeared for work in the foundries of any of the shops of the Milwaukee Foundrymen's Association.

Evening Wisconsin, May 28, 1906.—Boilermakers at the Power and Mining Machinery Company plant, who struck, have reached an amicable understanding with their employers and have gone back to work.

Milwaukee Free Press, May 31, 1906.—Tanners employed by Pfister & Vogel Company asked an increase in pay from 15 to 16 cents per hour. It was met with a refusal. Several hundred are employed.

Tanners in the employ of the American Hide & Leather Company will receive an increase of 1 cent an hour.

Milwaukee Free Press, June 8, 1906.—Molders' strike in Milwaukee is still on. The union is one of the strongest in existence. It is said that about 5,000 men are on a strike all over the country. Strikers receive \$7.00 per week from the treasury of the union.

Milwaukee Free Press, June 13, 1906.—The machinists employed by the C., M. & St. P. road were last week given a raise of 15 per cent. This raise affects about 40.

The foundry men of Milwaukee offered the molders an advance in wages or shorter hours, with the same pay. The union molders demanded a written agreement for recognition of the coremakers and a closed shop agreement, and that is the issue. The foundry men voluntarily increased wages of coremakers and molders from 5 to 10 per cent May 1st, and their average wages at that time were about \$3.00 per day. Because of the refusal to sign a written agreement embodying union restrictions, they struck May 2nd and have been out since. The foundries are running today with about one-third of their normal output, with competent non-union helpers, and will hereafter maintain open shops free to all men. Only as individuals can molders return to work. Twenty-three foundries of the city have open shops and employ about 2,300 molders, as against five foundries who signed an agreement the first week of the strike and who employ 157 molders. Thus out of 28 foundries in the city, 23 are open shops and 5 are closed.

Free Press, June 14, 1906.—In regard to the 1,200 molders it is said that the employers offered to raise wages, but did not offer a shorter day.

It is also said the molders did not include in their demands any provisions as to open or closed shops. What they demanded was a nine hour day, with a minimum wage of \$2.85 for coremakers who have never had a minimum scale, and an increase of the minimum for molders from \$2.80 to \$3.15 for bench molders and from \$3.00 to \$3.25 for floor molders.

Free Press, July 6, 1906.—Within a few months a new building will be ready for occupancy at the West Milwaukee Shops of the C., M. & St. Paul Railroad. The number of employees will be increased from 4,008 to 5,000.

Free Press, July 14, 1906.—It is said there are no calls for workmen from the wheat fields to Milwaukee. We could send them all the men they wanted if they would furnish transportation. Men are constantly asking for work in the West. We do have a shortage of girls. There is a call for them at the various summer resorts.

It is reported that the foundry-men have 884 men working, which is 68 per cent of their normal number. These men, it is said, turn out 56 per cent of their normal output of castings.

Free Press, July 27, 1906.—The Iron Molders' Union sent 20 men to Cleveland, Ohio, to work in molders' plants yesterday. On Wednesday of this week 15 men left for Sharon, Pa. It was said at the headquarters of molders that they have more calls for men from all over the country than they can fill.

Milwaukee Free Press, Aug. 1, 1906.—A large portion of the conservative molders, with their families, are not in sympathy with a longer continuance of the strike, and they will soon be strong enough to make up their mind to go to work. Men find it hard to fall from \$3.00 per day to \$1.00 per day, which the union pays them. The season also has a great deal to do in regard to the continuance of the strike. In summer one can get along a great deal cheaper than in the winter.

Milwaukee Free Press, August 2, 1906.—There is great demand for bakers in this city and in this state. The reason for this is because Milwaukee pays lower wages than any other city of its size in the country; therefore, bakers go where wages are better.

Milwaukee Free Press, August 5, 1906.—The four establishments which are affected by the lithographers' strike are working as usual. This they do, however, by employing their office forces, which are largely made up of practical lithographers, it is said by strikers.

Milwaukee Free Press, August 11, 1906.—A foundryman of this city says that the molders' strike will never be settled. "The foundrymen will make no concessions and will not agree to a closed shop. As to the statement made by strikers that a great deal of scrap casting is turned out, we have not so much scrap castings turned out as they claim, and if we had we could afford it, as we have more machines now, each of which does the work of three molders. The little scrap that we may have we can melt over without any expense whatever."

Milwaukee Journal, August 3, 1906.—As a result of a disagreement on the question of arbitration about a dozen men employed at the plant of the Gugler Lithographing Company have walked out on strike. Others remain at work. The firm demanded that the national organization take up the question of adjusting the differences by arbitration, but this the men declined to accede to. At a number of other plants, including that of the Wilmanns Bros. Co., the total number on strike is reported as 50. The men demand an 8 hour day at the old wage. The Northwestern Company later acceded to the demands, temporarily at least, and other shops say they will do so if the majority of the shops agree.

Free Press, August 4, 1906.—The International Association of Machinists has, according to F. W. Wilson, business agent for the Machinists' Union, been successful in making agreements with a number of shops in the country to become union shops.

Evening Wisconsin. August 9, 1906.—Mining companies in the Lake Superior region are coming in conflict with the demand for harvest hands and are offering great inducements to men to go to work for them. They offer free transportation and \$2.00 per day for the balance of the season.

Free Press, August 10, 1906.—According to a statement made by a Milwaukee lithographer, the result of the present strike of lithographers in this city and throughout the country may be an open shop policy, at least on the part of those employers who are members of the National Lithographing Employers' Association.

Free Press, August 10, 1906.—The molders' strike remains the same. Yesterday was pay day for the striking molders, and about \$3,000 was paid out by the striking union.

Milwaukee Daily News, August 13, 1906.—Four thousand laborers are needed in southwest Wisconsin for mines, farms, etc.

Milwaukee Free Press, August 14, 1906.—This has been a quiet year in the plumbers' trade. There were comparatively few strikes this year throughout the country, about the only one being that at Sheboygan. The strike has been on there since May 1. A number of shops have already come to a settlement with the union.

Milwaukee Free Press, August 21, 1906.—The Association of Employers of Lithographers issued cards in almost every city in the United States outside of Milwaukee, announcing that hereafter its members will operate open shops. As a result artists working in the establishments, who have had an eight hour day for years, went out on a sympathetic strike.

Milwaukee Free Press, August 23, 1906.—At a meeting of striking lithographers last night at 300 Fourth St., it was reported that the George Schlegel Company, which is a member of the Employing Lithographers' Association, has acceded to the demand of the union for an eight hour day.

Milwaukee News, August 24, 1906.—A large number of the striking molders have left the city and have found employment elsewhere. The demand for molders is greater than ever before, and as a result the amount of money paid out in strike benefits yesterday showed a wonderful decrease in the number of idle men of that craft in the city.

Milwaukee Free Press, August 25, 1906.—“One-third of the lithographers who went out on a strike in this city already are employed in various establishments which acceded in the demands of the union in this city and elsewhere.” said one of the striking lithographers yesterday. “There is a great demand for lithographers all over the country just now, and we are constantly receiving letters to go to other cities. By the time a settlement will be brought about here more than half of the men may be employed elsewhere.” A meeting of striking artists, engravers and designers was held last night. “We are striking to better our conditions,” said one of the men, “We have an eight hour day. What we are striking for is the principle involved, the securing of an eight hour day for all lithographers in this country.”

It was reported last night that about 30 of the striking artists will leave for Yellowstone Park for a vacation. But it is understood that there is a demand for artists in that part of the country and many of them may remain there, if they get work.

Milwaukee Free Press, August 31, 1906.—The molders' strike remains unchanged, and so far there is no prospect of settlement. The closed shop has never been made an issue in conference. Demands are the recognition of the minimum wage scale and a nine hour day.

Milwaukee Free Press, September 1, 1906.—Yesterday was pay day for striking molders. About three thousand dollars was paid out. The molders refused to discuss the report which came from Chicago that machines will be used in place of those molders who are on strike. They said that the new machine is unknown to them.

Milwaukee Free Press, September 2, 1906.—“Printers in this city are well organized now,” said Henry Ohl, chairman of the executive board of Typographical Union. “There is hardly an important printing establishment in this city that does not belong to the union. The eight hour day is practically won all over the country. Next month the assessment will be reduced to 8 per cent, and in a few months will be dropped entirely.

“Our contract with employers in this city expires on June 1 of next year. We believe that the employers of this city will grant the eight hour demand without any fight. The business men of this city are helping us by demanding the union label. They find it to their advantage to have the label on their printing, and they make it a point to see it is there. The demand for the label is larger in Milwaukee than in any city of its size in the country.”

Milwaukee Free Press, September 8, 1906.—The union barber shops are still in the minority, but are gradually getting more shops to join the union. They are trying to get all shops to close at 8 o'clock on week days and later to get them to close on Sundays.

Milwaukee Free Press, September 8, 1906.—The Metal Trades and Founders' Association are filling the shops with as many machines as they can get. While the machines cannot be run without men, they turn out more work than a man would turn out without the machines, and also they do not require skillful molders.

The strike remains unchanged. The men must decide soon now; once the shops are filled with other men, the strike will be ended of its own accord, and the men will have to go elsewhere for work.

Milwaukee Free Press, September 15, 1906.—There is said to be trouble between the Postal Telegraph Company and its operators. According to the story in circulation, which neither operators nor officials of the company in Milwaukee will discuss, the operators recently sent a list of 32 requests to officials of the company. In refusing the requests the company is said to have ignored the union by sending individual letters to operators.

Milwaukee Daily News, September 17, 1906.—It is said that the strikes which have been carried on in different parts of the state have not, as a rule, been for higher wages, but for a recognition of the union. Almost all the unions have increased their membership about 25 per cent, while the carpenters and painters have doubled their number, but in few cases have wages been increased. Bricklayers, millwrights and painters have increased their pay 5 cents an hour and carpenters $2\frac{1}{2}$ cents an hour.

Milwaukee Daily News, September 22, 1906.—An agreement has been reached between the Steam Fitters' Union and the brewers and the striking members of the union have returned to work at an increased rate of pay. The steam fitters had been paid at the rate of \$3.00 per day, but last week they made a demand for \$3.50 per day, which was refused. The refusal was followed by a strike of 16 men. The brewers then granted the demands of the men and the strike was called off.

Milwaukee Free Press, September 24, 1906.—The strike of the Winnepeg Building Trades Union, involving 4,000 men, was settled tonight and a permanent board of arbitration appointed. The strike has tied up all buildings for several weeks.

Milwaukee Journal, October 3, 1906.—The Milwaukee R. R. is building an addition to its shops at Milwaukee which will give employment to 100 more men. During the past two months they have added 200 men to their pay roll, mostly in their foundries and car erecting departments. Over 4,500 men are now employed by this company.

Evening Wisconsin, Milwaukee, October 12, 1906.—The condition at the foundries in Milwaukee are improving constantly, it is said, and the molders' strike will soon be forgotten. They now have about 80 per cent of their original help and are getting out about 75 per cent of their original output. The new men are becoming very proficient. Nearly all of the men who went out have left the city with the exception of about 20, who gave up the fight and returned to work.

Milwaukee Free Press, October 24, 1906.—A resolution was passed several weeks ago calling upon the various labor unions throughout

the state to give their support to the striking iron molders in Milwaukee. It is expected that the unions throughout the state will readily respond.

Mineral Point, November 30, 1905.—The Tripoli Mining Company have made preparations to run the mine throughout the entire winter. Company now has about 40 men on the pay roll. The latest important addition to the plant is a large roaster of the Mathee make by the Galena Iron Works.

Monroe, January 13, 1906.—Messrs. Mayer & Keiger of Chicago, have arranged to install machinery in glove factory. Are to manufacture gloves, skirts, clothing, mittens, etc., and will give employment to 150 operatives.

Neenah, December 30, 1905.—Paper mill workers start a fraternal insurance society among union men of the Fox River Valley. Insurance is life, accident and sick benefit.

Neenah, March 7, 1906.—The Neenah Paper Company's mill was destroyed by fire. The loss is estimated at \$100,000; 100 men were employed in the establishment.

Oconomowoc, January 24, 1906.—One hundred men working for the Knickerbocker Ice Co. struck yesterday. The men were getting \$1.50 per day and demanded \$1.75. The company will fill their places with men from Chicago.

Oconomowoc, January 26, 1906.—A majority of the striking employees of the Knickerbocker Ice Co. have gone back to work at \$1.50 per day, the old scale. An injunctive order restraining from maliciously cutting holes in the ice on Fowler Lake and from interfering with the ice to injure or damage, the plaintiff, the Knickerbocker Ice Co., was served on eleven men yesterday.

Oshkosh, November 20, 1905.—Oshkosh experienced a shortage in factory laborers. The reasons were: first, that much of the regular labor was drawn to the woods, and second, that outside work is preferred to factory work.

Oshkosh, November 20, 1905.—Twenty men employed in the Wisconsin Art Glass Co.'s plant struck. Strike occasioned by the discharge by the company of one of the apprentices.

Oshkosh, November 21, 1905.—Eight of the men employed on the riveting works of the Main Street bridge struck. They were employed by the Modern Steel Structural Co. Cause of the strike was the employment by the company of non-union riveters.

Oshkosh, November 23, 1905.—Glass workers of the Wisconsin Art Glass Co. have returned to work and the factory is again in operation. The men returned to work with no concessions made by the company, taking up their work under the former regulations.

Oshkosh, March 28, 1906.—About 200 section hands employed by the Chicago, Milwaukee & St. Paul Ry. yards in Milwaukee went on a strike, demanding an increase from \$1.50 to \$1.75 per day.

Oshkosh, March 28, 1906.—Members of the Oshkosh Carpenters' union to the number of about 150 are on a strike as the result of a demand

on the building contractors of the city for a fixed wage scale of 30 cents an hour, minimum, and the refusal of contractors to make an agreement without due consideration.

Peshtigo Times, September 13, 1906.—About 40 men have been sent up the line to work on an extensive grading job near Everett, Miscoano Island, and the Noquebay branch. This work is necessary before the logging season comes. More blacksmiths have also been called into requisition for fitting up logging flats with chains and rails.

Platteville, November 2, 1905.—There is a growing demand for skilled labor throughout the mining districts.

Platteville, November 2, 1905.—Seventy-five laborers are making track improvements between Mineral Point, Calamine and this city.

Platteville, August 1, 1906.—There is a scarcity of labor in the mining districts of Platteville and they are willing to pay \$2.50 per day. Scandinavian laborers are especially sought by the employers.

Prairie du Chien, December 6, 1905.—Button factory established which will give employment to over 100 men.

Prairie du Chien, October 17, 1906.—A gang of cement workers on the Burlington struck Thursday for more pay and steadier hours. The contractors immediately imported a gang of negroes from Chicago to take their places.

Prescott, Wis., September, 1906.—Employment agencies have booked many orders for woodsmen of late, but as they have been fairly deluged for three months past with demands for labor in other lines and have been able only partially to meet the calls upon them, it is likely that this source of supply will avail the lumbering interests little. The lumber companies are offering good wages, ranging from \$26 to \$35 a month, and excellent board and accommodations, but they will, no doubt, be compelled to draw on the Italian and other foreign colonies of the big cities for workmen.

Racine, November 3, 1905.—The Harman Trunk Company has awarded the contract for a new addition to its plant. Estimated cost of new structure is \$15,000. This will necessitate the doubling of the labor force which is now about 200.

Racine, January 3, 1906.—Proprietors of all newspapers and job printing offices have conceded the eight hour day to printers.

Racine, January 27, 1906.—The Mitchell Motor Car Company on January 1 had orders on its books amounting to \$650,000 and on February 15 the factory is to run night and day with a force of 400 men.

Racine, February 7, 1906.—The Racine Malleable and Wrought Iron Company's plant, located at Lakeside, was sold to Cleveland, Ohio, parties for \$250,000. The principal purchasers are the Everhart Manufacturing Co., of Cleveland. The company was capitalized for \$200,000 and employed 300 hands. Employees will be increased to 700.

Racine, April 24, 1906.—The strike which started yesterday in the Big Allen Tannery has spread to every part of the shop and between 1,000 and 1,500 men are out.

Racine, May 10, 1906.—Twenty Hungarians and Italians employed by the Racine Gas Co. in digging trenches struck today because an increase in wages from \$1.75 to \$2.00 per day was refused.

Racine Journal, September 14, 1906.—There never has been so large an amount spent in factories as during the year 1906. The amount spent will not fall short of one-half million. Factories are swamped with orders, and are running overtime. Some are running night and day. The Mitchell & Lewis Co. are putting up the largest factory ever built in this city and when completed will employ from 200 to 300 men. Factories are being built and remodeled all over the city. It is estimated that the improvement made this year will call for an increase of not far from 1,000 operatives.

Racine, October 11, 1906.—This afternoon one hundred molders employed by the Wisconsin Engine Co., at Corliss, went out on a strike, necessitating closing the entire molders' department. They struck because they were promised 10 hours' pay for 9 hours' work. They thought they were getting it until one of their men quit and when he received his check saw they were only paying for nine hours. In consequence they all quit. The officers of the company refused to make any statement.

Racine, October 12, 1906.—Union printers at Marinette and Menominee have gone on a strike for the enforcement of the eight hour day.

Rhineland, January 5, 1906.—The big plant of the Wisconsin Veneer Co., twice destroyed by fire, commenced operations January 3, 1906. Plant is nearly twice as large as last one. Will employ about 80 men.

Rice Lake, January 27, 1906.—Farmers of Barron County are to be formed into local unions of the American Society of Equity. Object is to control marketing and price-making.

Rice Lake, June 1, 1906.—The strike of the saw mill men at Hayward was settled last week by granting them a ten hour day with slightly reduced pay.

Sheboygan, May 3, 1906.—Plumbers and Steam Fitters' Unions have quit work on a demand for higher wages. Building operations are greatly hampered.

Sparta, Wis, September 21, 1906.—A new factory which will manufacture patent well tubing and stock will be located on East Oak St. From eight to a dozen men will be employed at the start and the force will be increased as the business grows.

Spring Valley, May 31, 1906.—About 20 Polanders working in the mines struck Saturday for shorter hours and more pay.

Stevens Point, July 14, 1906.—Eighteen of the nineteen men who were working for the city on the stone crusher went on a strike Monday. They received \$1.50 per day and wanted an increase of 25 cents. They would not even work until night to give time to secure other men, and as a result work ceased for a while. The places were soon filled.

Sturgeon Bay. Door County Democrat, August 4, 1906.—There are good prospects for a cement factory at Sturgeon Bay which will employ 350 men the year around. The factory proposed would have a capacity of 1,000 barrels per day.

Superior, January 24, 1906.—The Northwestern Boiler Works and the National Boiler Works closed down because of a strike by 200 boiler makers. The union demanded a 25 per cent increase in wages per day, which was refused.

Superior, February 6, 1906.—The boiler makers of the city who were out on a strike have returned to work at an increase in their pay of 2 2-3 cents an hour. Men to receive double time on all repair work and time and one-half on all new work for all straight over time.

Superior Telegram, July 18, 1906.—A strike of 35 chairmen at Weyerhauser Mill at Lake Nebagamon has necessitated closing down the plant there nights. They quit work because of the company refusing them a request of 25 cents advance in pay. They now get \$2.00 per day.

Tomahawk, September 15, 1906.—The Tomahawk Box Company's manufacturing plant is running steadily and gives promise of becoming one of Tomahawk's important manufacturing plants. At the present time 20 men are employed at the plant but it is expected that 30 or 35 men will be given employment within a few days.

Two Rivers, November 21, 1905.—The Aluminum Mfg. Co. are building an addition to their factory as large as the present works. Capacity of the plant is to be doubled. Company now employs 125 hands.

Two Rivers, January 11, 1906.—Two Rivers Brick Co. is a new company which is to establish a plant on the Misticott River near this city. Output of plant to be about 60,000 per day.

Washburn, March 24, 1906.—Washburn Stone Co. begins season with sixty men employed.

The Washburn Times, August 2, 1906.—The first raft of spruce pulpwood which has arrived at this point has been loaded on cars and is now at its destination. The raft contained 95 car loads. Arrangements have been made for the development of this business, and next season it is expected that from 25 to 40 men will be employed during the entire summer.

Washburn, Wis., August 16, 1906.—The Nye-Jenks Grain Company have increased the wages of their men. This took effect August 15. The lowest paid man now gets \$2.25 per day. The raise came as a surprise to the workmen.

Washburn, September 20, 1906.—The new mill of The Hines Lumber Co. will run night and day. Between 40 and 50 men are employed in and about the mill during the day and almost that number will work nights.

Watertown, Wis., September 21, 1906.—The Washington Cutlery Company here will install new machinery and will start October 1. They will start with 40 men and will gradually increase to 100 men.

Wausau, November 2, 1905.—Many of the large lumber companies are operating with only half force. The cause of the scarcity of labor is due to the fact that employment agencies are sending many of the laborers to the western states where the lumber industry is rapidly developing and where wages are higher.

West Allis, January 22, 1906.—As a result of the strike of the machinists of the plant of the Allis-Chalmers Company, a sweeping injunction has been issued upon the petition of the American Bridge Co. against thirty members of the Structural Iron Workers' Union. Strikers are enjoined from interfering in any way with anyone wishing to enter the employment of the American Bridge company.







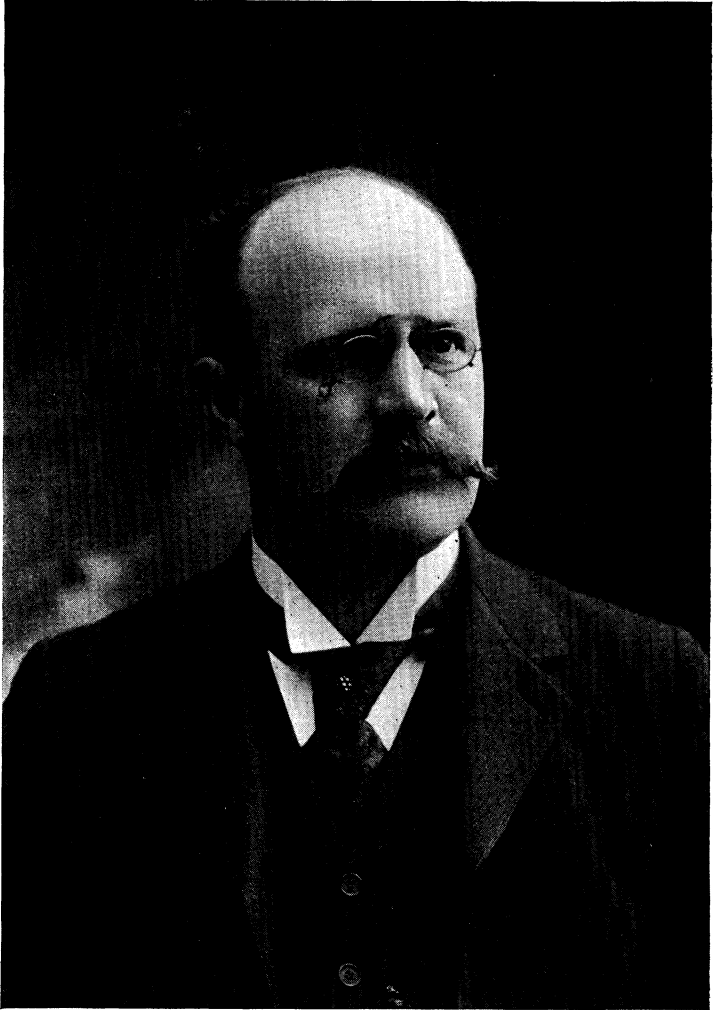












PRES. CHARLES E. MCLENEGAN.

PROCEEDINGS

OF THE

FIFTY-THIRD ANNUAL SESSION

OF THE

Wisconsin Teachers' Association

HELD AT

Milwaukee, December 27-29, 1905.

Issued by the officers of the Association, and printed by the State Printing Commissioners by authority of section 335e, Wisconsin statutes, as amended by chapter 339, Laws of 1901.



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DEMOCRAT PRINTING Co., STATE PRINTER.

1905.

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- First Vice President.....MRS. MARY D. BRADFORD, Stevens Point
State Normal School.
- Second Vice President.....S. B. Tobey, Wausau
City Superintendent of Schools.
- Third Vice President.....F. B. DELL, Black River Falls
- SecretaryKATHERINE R. WILLIAMS, Milwaukee
Teacher Fifteenth District School—2.
- TreasurerC. W. RITTENBURG, Whitewater
City Superintendent of Schools.
- Railroad ManagerWM. F. SELL, Milwaukee
Principal Twenty-first District School.
- Chairman of Local Committee.....LUCIUS T. GOULD, Milwaukee
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3. WM. F. SELL,
R. R. Manager.

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4. LUCIUS T. GOULD,
Chm. Local Committee.

PROCEEDINGS

OF THE

Wisconsin Teachers' Association

Held at Milwaukee, December 27--29, 1905.

REPORT OF GENERAL MEETINGS.

Davidson Theater, Wednesday, December 27, 1905.

The Fifty-third annual convention of the Wisconsin Teachers' Association was called to order at 9:15 A. M., at the Davidson Theater, Milwaukee, by President Charles E. McLenegan.

President McLenegan announced the appointment of the following committees:

Enrollment—C. W. Rittenburg, Whitewater, Chairman; A. N. Fairchild, Milwaukee; H. G. Hayden, LaCrosse; J. F. Bergen, Mineral Point; W. L. Smithyman, Milwaukee; P. G. W. Keller, Manitowoc; B. B. James, Waukesha; R. B. Dudgeon, Madison; D. H. Schuler, Milwaukee; J. J. Finan, Milwaukee; E. D. Martin, Chippewa Falls; R. W. Pringle, Appleton; W. E. Maddock, Superior; Thomas R. Lloyd-Jones, Wauwatosa; John Callahan, Menasha; B. E. Nelson, Racine; C. C. Parlin, Wausau; J. A. Hageman, Ft. Atkinson; O. G. Gilbert, Milwaukee.

On Resolutions—Frank M. Jack, Sparta, Chairman; C. W. Smith, Kilbourn; Lillian G. Kimball, Oshkosh.

On Honorary Members—Julia R. Rockafellow, Waukesha; V. E. McCaskill, Superior; William Wilson, Fond du Lac.

On Nomination—M. N. McIver, Eau Claire, Chairman; A. A. Upham, Whitewater; Mary G. Murphy, Milwaukee.

On Legislation—for three years—A. W. Tressler, Madison.

On Amelioration of our Spelling for seven years—E. D. Martin, Racine.

The President further announced that, in accordance with the resolution passed by the Association in 1904, demanding a more business-like method for the election of officers, chosen by ballot, a primary election system had been provided. The plan of election and details of its operation were printed on the reverse of each membership certificate in the following form:

Proposed Plan for Nomination and Election of President and Secretary to be Voted Upon at 9 A. M. Dec. 27, 1905.

In accordance with the resolution, adopted at the last annual meeting of the Wisconsin Teachers' Association, directing the Executive Committee to inaugurate a different plan of electing officers, arrangements have been made to carry out the following plan:

"It shall be the duty of the Nominating Committee to establish a polling place at which each active member of the Association, on presentation in person of membership certificate or other satisfactory evidence of paid membership for the year, shall be allowed to cast a ballot for one candidate for President and one candidate for Secretary. The polling place, which shall be in a convenient location in the building in which the general sessions are held, shall be in charge of three judges, appointed by the nominating committee, and shall be open from nine (9) A. M. until one (1) P. M., on the first day of the convention. Each membership ticket shall have attached thereto one nominating ballot and one election ballot for each officer to be elected. (No other kind of ballot shall be used by the person desiring to use the same, except upon written application to the Nominating Committee and approved by the committee.) Immediately after the close of the polls of the first day, the judges shall count the vote and certify the result to the Nominating Committee who shall report it to the convention at nine o'clock on the second day of the meeting. Any person receiving a majority of all votes cast for any office shall be declared elected. The two persons receiving the largest vote for President shall be declared nominated for President, and the two receiving the largest vote for Secretary shall be declared nominated for Secretary.

The balloting for election shall be conducted in a manner similar to that for nominations. The names of the nominees shall be posted at the polling place and in at least one other convenient and conspicuous location. The polling place shall be open for the final voting from nine (9) o'clock A. M. to one (1) o'clock P. M. on the second day of the convention,, and the ballots shall be counted as before immediately after the close of the balloting and the result certified to the Nominating Committee and by them reported to the convention at nine (9) o'clock A. M. on the last day of the session. The nominee receiving a majority of the votes cast for any office, shall be declared elected to that office.

Note.—By provision of the constitution, all officers except President and Secretary, must be nominated by the Nominating Committee. In December, 1905, a President only is to be elected.

After the announcement the polls were declared open for the balloting for nominees for President.

The first number on the program was a talk on "Mutual School Insurance," given by Superintendent Allen B. West, Lake Mills. Mr. West was chairman of the committee appointed by the Superintendents and Supervising Principals' Association to work up this matter and in his remarks to the association Mr. West gave a summary of the work done and the results accomplished by his committee; he said:

MUTUAL SCHOOL INSURANCE.

By Allen B. West.

I speak to three propositions:

1. School buildings are excellent risks, much better risks than Stock companies would have us believe.
2. School Boards are now required to pay too much for the insurance of school property.
3. There is a better way.

Insurance at actual cost is no new thing in Wisconsin. Forty years ago a bill passed the legislature permitting the farmers of a town or of adjoining towns to form an insurance company for the purpose of insuring their own houses, barns, implements, stock and grains.

This law has met with such favor that there were reported to the Insurance Commissioner, in the year 1904, 200 such companies doing business in Wisconsin insuring \$263,000,000 of property. So

economically have these farmers managed their business that, on an average for the year mentioned, their insurance cost them less than two mills on a dollar.

Under more recent laws, Hardware Dealers Mutuals, Retail Lumber Dealers Mutuals, City and Village Mutuals, and Church Mutuals have been organized and are giving relief in their own particular lines.

While farmers are paying two mills on a dollar for their insurance, School Boards are required to pay five, six, seven and even eight mills on a dollar on the cream of insurance risks, well constructed school buildings, brick and stone buildings, buildings isolated from other property. It is true that some of the larger cities have made better arrangements. The cities of Milwaukee and LaCrosse do not insure their school buildings, or, in other words, they carry their own insurance, and well can they afford to do so, for the city of Milwaukee has not lost a school building by fire for more than thirty years.

The smaller cities and villages, however, cannot carry their own insurance. The Superintendents' Association has set out to provide relief for them. One year ago, a committee was appointed. This committee, after consulting the Insurance Commissioner, acting upon his suggestions and under his approval, drafted bill No. 577A. This bill, now a law, offers to the tax payers of Wisconsin, a cheap yet safe plan for school insurance. Under this law school districts, school boards, and boards of education not less than twenty five in number and desiring insurance in the aggregate of not less than \$250,000 may organize a mutual insurance company for the purpose of insuring school property only. Just as farmers pay the losses and expenses of their companies in proportion to the amount of insurance each one carries, so each school board will stand its pro rata only of all losses and expenses of such company.

Will you take this message to your School Boards? Refer them to the law. Urge them to help the movement along by asking for small amounts on each school building, \$500, \$1,000, \$5,000. The speaker will receive such applications until the requisite \$250,000 has been applied for when a meeting will be called to perfect an organization.

If this matter is carried to a finish the teachers of Wisconsin must do it. School Boards will not care to antagonize insurance agents nor to assume new duties. Therefore, fellow teachers I appeal to you. Bring this matter speedily to the attention of the Boards of Education and to the attention of the School Districts at their regular school meeting in July.

John F. Lamont, chairman of committee on Legislation, was absent and no report was made. No formal report of the committee on Uniformity of Curricula was made. The secretary read a quotation from a letter from Chairman Terry, stating that the committee had been at work but could only report progress.

The committee on Teachers' Work, Wages and Pensions made no formal report. Chairman A. H. Sage in a letter to the secretary, reported that nothing definite had been done by the committee.

A chorus from the First District school, Milwaukee, directed by Thomas E. Boyce, sang three songs which were very favorably received; especially a solo and chorus number.

In his address upon "Pensions; More a Harm than a Benefit," G. H. Landgraf, Marinette, took the stand that pensions tended to decrease the independence and self-respect of the teacher; while Miss Nellie Minnehan, Milwaukee, contended that the term "pension" is a misnomer, and that the so-called pension which teachers advocate is an annuity or retiring fund.

(All papers and discussions read before the general sessions are found in full elsewhere in this volume.)

Carroll G. Pearse, Milwaukee, was the next speaker and he addressed the association upon "The Besetments of the Schoolmaster." Superintendent Pearse explained that he included superintendent, principal and class-teacher alike in the term schoolmaster and without distinction as to sex.

John Kennedy of Batavia, New York, explained the workings of the "Batavia System" of education which he originated and has now in operation in the schools at Batavia. His plan was discussed by F. E. Converse of Beloit, who had visited the schools at Batavia and had seen the plan in operation.

At this point a floral offering, accompanied by the following communication, was placed on the President's desk:

Milwaukee, December 28, 1905.

Wisconsin Teachers' Association,

Ladies and Gentlemen:

It affords the people of Milwaukee particular pleasure to meet and greet your great state Association in annual convention in this city.

On behalf of the large and representative membership of the Citizens' Business League and for all the people of Milwaukee we extend to you a most cordial invitation to hold your next convention in this

city. We do so, confident in the belief that you find just the right conditions here for the holding of successful business and social sessions and we assure you that we shall ever esteem it a privilege to do all in our power to assist in making your meeting here of the greatest possible value to your membership.

Wishing you continued prosperity, we remain,

Yours truly,

Citizens' Business League,

R. B. Watrous,

Secretary.

A communication from the committee on Enrollment, stating that twenty-six sisters, teachers in the Catholic parochial schools of Milwaukee had joined the Association this year, was read by the President. President McLenegan welcomed the new members and expressed the hope that next year the number would be increased and that the teachers in schools of other denominations would also become members. The meeting endorsed the welcome with hearty applause.

The pupils of the Port Washington schools under the direction of Edith Harney, then sang three choruses of a varied nature, the association applauding their efforts.

"The Education of the Working Child," the next topic taken up, was discussed by Thomas Morgan of Chicago. In introducing Mr. Morgan, the President explained that Miss Julia Lathrop, who was to have treated of this subject, was ill and that Mr. Morgan had consented to take her place.

Rabbi Samuel Hirschberg, Milwaukee, closed the morning's program with an address upon "Ethical Teaching in the Public Schools."

Thursday, December 28, 9:00 A. M.

The second general session opened a few minutes late as those to appear on the program were late.

The first order of business was the report of the committee on Nominations: Chairman M. N. McIver reported the result of the ballot for nominees for president as follows:—John F. Sims—172; G. C. Shutts—164; Mary D. Bradford—86; R. H. Halsey—31; J. W. Livingston—17; W. C. Hewitt—9; scattering—12. In accordance with the plan of election in operation, John F. Sims and G. C. Shutts, the two candidates receiving the greater number of votes, were declared

the nominees for president, and the polls were declared open for the formal ballot for president.

The appended communication from F. S. Hyer, chairman of the College, Normal, High School section, was read.

President McLenegan,—Please announce the following committee on the Content of Elementary Geometry:—Joseph V. Collins, Stevens Point, chairman; C. F. Viebahn, Watertown, Richard Krug, Milwaukee, Prof. E. Skinner, Madison, and H. L. Terry, Madison.

The College, Normal, High School section recommend that the report of the committee on Correlation of History and Civics be published at once and distributed among the members of the association.

The regular program was opened by the North High School Orchestra, Manitowoc, under the direction of Catharine Strouse. The orchestra consisted of seventeen members, and the association received their music with great applause.

In the absence of Chairman John M. True the secretary read the following report for the committee on Special Legislation:

RÉPORT OF THE COMMITTEE ON LEGISLATION.

The Committee on Legislation appointed at the last Annual Meeting of the Wisconsin State Teachers' Association, met soon after the opening of the Legislature of 1904—'05 at the Capitol in Madison and drafted the following bill as embodying the sentiment of the Association.

SECTION 1. A commission, consisting of three persons, is hereby created, to be appointed by the governor, president of the state university, and the president of the Stevens Point normal school, for the purpose of making a thorough investigation of all conditions pertaining to the equipment, maintenance, and teaching service of the rural and state graded schools, and the professional preparation of the teachers therein, and to report to the Legislature at its next biennial session.

SECTION 2. There is hereby appropriated out of the general fund of the state, not otherwise appropriated, a sum not exceeding \$15,000, for the purpose of carrying out the provisions of this act, and the governor, president of the state university, and president of the Stevens Point normal school, are hereby authorized to fix the compensation of the commission hereby created.

SECTION 3. This act shall take effect and be in force from and after its passage and publication.

This bill was introduced by Senator Stout. Opposition to the meas-

ure developed early in the session, and other bills similar in character were introduced, one of which became a law.

The Committee was not called before the Committee on Education, in advocacy of its measure, which was indefinitely postponed.

Respectfully submitted,

JOHN M. TRUE,

Chairman of Committee on Legislation.

Madison, October 30, 1905.

The appended report of the Committee on Special Legislation for the Lewis and Clarke Exposition was accepted.

REPORT OF THE COMMITTEE ON LEGISLATION CONCERNING LEWIS AND CLARK EXPOSITION AT PORTLAND.

To the Wisconsin Teachers' Association:

Agreeable to appointment last December, this committee conferred with members of the Legislature as to methods of securing an appropriation for an exhibit at the Exposition at Portland, Oregon.

A bill was introduced early in the late session, that provided for the expenditure of fifty thousand dollars by a commission, for the purposes in question. In the early days of the session, all minor questions were held in committees, in order to favor larger interests; no friends of the Exposition bill foresaw serious opposition to their measure, until an influential member stated publicly that he opposed it in interest of economy, and upon a vote to adopt a favorable report of a committee, the measure failed of approval. The general object of representing the state at Portland appealed to some members so thoroly that a reconsideration of the main question was undertaken, but it, in turn, was defeated.

During the session the undersigned was in correspondence with members and with parties who represented varied forms of exhibits, and he aided in concentrating public opinion upon the purposed legislation; but no headway could be made beyond that reported hereinbefore.

Respectfully submitted,

W. D. PARKER,

Chairman.

River Falls, Wisconsin, October 12, 1905.

Wm. L. Tomlins of Chicago addressed the meeting on "Music as a Vitalizing Force in Education."

The discussion on music was followed by the presentation of the two views on "University Entrance Requirements and the Secondary Schools." James A. Sheridan, Milwaukee, presented the view that the University requires too much scientific and language preparation and allows too little credit for manual training and commercial work done in the secondary schools. Prof. M. S. Slaughter of the University of Wisconsin defended the stand of his school, claiming that the high school is regarded as a finished unit and that the University has been doing its own preparatory work.

President McLenegan called Mrs. Mary D. Bradford, first vice-president, to the platform, and after introducing her, asked her to preside during the remainder of the program.

The acting President announced chorus singing by the pupils of the Wauwatosa High School. They sang three choruses which were very favorably received.

J. Q. Emery, State Dairy and Food Commissioner, was then introduced and in his address on "Food Adulteration," explained the forms of adulteration practiced and laws which were being devised to protect the public.

The Treble Clef Chorus, composed of members of the Milwaukee teaching force, sang three numbers under the leadership of Mrs. Frances Clarke. The teachers made an especial impression with their number touching on the salary question.

Dr. Amos P. Wilder of Madison spoke to the teachers upon "Some Teachers I Have Known." His address closed the formal program. President McLenegan resumed the chair, and called the attention of those present to the fact that the Constitution provided that the nominations of other officers be made after the election of president; that the plan of election in operation provided that the polls remain open until one o'clock, and that the By-Laws provided that the election be on the second day; so that the session could not close until the election was declared, unless the Association otherwise ordered.

H. C. Buell, Janesville, moved, That Article VII of the By-Laws be set aside. The motion was seconded.

A. H. Salisbury, Whitewater, moved to amend the motion to read, to suspend, but after some discussion withdrew his amendment, and the original motion was carried.

The session was then adjourned by the President.

WISCONSIN TEACHERS' ASSOCIATION.

Thursday, December 28, 8 P. M.

The following program was carried out at the Pabst Theater:

Organ Recital—
 Prof. W. H. Middleschulte, Chicago
 Concert dalz Thieie
 Introduction Double Figure..... Hugo Kaun
 Angelus Liszt
 Andante Cantabile Pastorale..... Massenet
 Perpetuum Mobile (Pedals alone)..... Middleschulte
 Festival Overture Liszt-Nicolai
 Address—"The State and the School," Dr. Frederick M. Edwards, Milwaukee.

Friday, December 29, 1905.

The meeting was called to order by President McLenegan at 9:15 A. M.

The pupils of St. John's Cathedral School, Milwaukee, rendered a chorus under the direction of Mr. Albert Kramer.

The Committee on Nominations presented the following report:

Plankinton House, Milwaukee, Wis., Dec. 28, 1905.

To the Wisconsin Teachers' Association:

Your committee on Nominations make the following report of the ballot for President:

Total number of votes cast.....	558
J. F. Sims received.....	312
G. C. Shutts received.....	246

M. N. M'IVER,

MARY G. MURPHY.

President: Mr. J. F. Sims is therefore elected President of the Association for the coming year. (Great applause.)

Mr. Shutts: I move that the vote be made unanimous. Seconded, and unanimously carried.

President McLenegan: I would request Mr. Sims to take the chair. (Mr. Sims took the chair.)

President Sims: I thank the members of this convention very cordially for the honor they have conferred upon me, and I assure you that I will try to exercise the duties of the office to the very best of my ability.

I appear on this platform this morning somewhat under protest, and I know that you do not come to hear me. So I take pleasure in intro-

ducing the first speaker, who will address you on the subject of "A Square Deal for the Country School," Mr. Alfred Bayliss, Superintendent of Public Instruction in Illinois.

President Sims: The discussion of the Rural School Problem will be continued in the next paper, "Consolidation of Rural Schools." This paper was prepared by State Superintendent Charles P. Cary, but his voice is out of condition this morning, due of course to the sudden and extreme changes of the Milwaukee atmosphere. The paper will be read by Prof. C. E. Patzer of the Milwaukee Normal School.

Mr. McLenegan took the chair. Various announcements were made, including the reading of a letter from Mr. Harvey, of Menomonie, and the following telegram relative to the N. E. A. meeting at San Francisco in 1906:

San Francisco, Calif., Dec. 28th, 1905.

President Wisconsin Teachers' Ass'n,
Milwaukee.

California Committee arranging reception forty-fifth convention N. E. A. sends greetings to Wisconsin Teachers' Association and looks for large representation from Wisconsin next July.

RUFUS P. JENNINGS,

Chairman.

President: I will call for a further and a deferred report of the committee on Nominations.

Mr. McIver: Your committee on Nominations make the following report of candidates:

For 1st Vice President, F. E. Converse of Beloit.

2d Vice President, Frances M. Walsh of Milwaukee.

3d Vice President, J. T. Hooper of Ashland.

Member of Executive Committee, F. S. Hyer, Stevens Point.

Treasurer, Julia R. Rockafellow, Waukesha.

Mr. Webb: I move that the report be adopted.

Motion seconded, unanimously carried, and report adopted.

Report of committee on Honorary Membership was deferred.

Report of committee on Resolutions was read by Mr. Frank M. Jack, Chairman. It is as follows:

REPORT OF COMMITTEE ON RESOLUTIONS.

To the Wisconsin Teachers' Association:

Your committee on Resolutions respectfully submit the following:

We recognize in the present attitude of public sentiment regarding

moral training both an evidence of an awakening of the public conscience and a call for more definite and intensive attention to moral results in all our educational work from the university and high school to the all important country school.

Believing that the educational forces of a state should be foremost in true moral and social progress and that we should not wait to be forced into action by an indignant public sentiment, therefore,

We view with hearty approval the demands of our Educational directive element, the university, college, normal and high school, for a cleaner, more humane and less specialized conduct of athletics.

WHEREAS, The high school is the principal source of education for the country school or grade teachers, therefore be it

Resolved, That for these students who intend to teach, that the high school course of study be so changed as to afford them high school instruction in the essential branches required to be taught in the district or graded school.

Resolved, That we appreciate the effort made by the Executive Committee to devise a better method of voting on the election of officers, and that we urge such further consideration in perfecting the method as in the judgment of the committee may seem necessary.

Resolved, That we approve the work of the following committees and urge such further effort, along their several lines, as will prove beneficial to the welfare of our schools.

Committee on Legislation.

Committee on Teachers' Work, Wages and Pensions.

Committee on Amelioration of Our Spelling.

Committee on Creating Uniformity of Course of Study.

Executive Committee.

Resolved, That we express our confidence in the value of music in public schools and our approval of the emphasis given to this subject on the program.

Resolved, That this Association now determine upon a salary for the Secretary of this body which shall be commensurate with the duties of the office.

Resolved, That we extend our sincere thanks to the following for contributions to the local committee for local expenses incurred at this meeting: Hotel Men's Association, T. A. Chapman Co., Gimbel Bros., Boston Store, Ed. Schuster & Co., Espenhain Dry Goods Co., Hugo E. Bauch, Bunde & Upmeyer, The Gerretson Silk Co., C. Preusser Jewelry Co., Kroeger Bros. & Co., Citizens Business League.

WHEREAS, The late Hon. James Sutherland, the first City Superintendent of Schools of Janesville, while representing the Rock county district in the State senate, chairman of the Educational committee of that

body, introduced the first Normal School bill for setting aside the swamp lands for Normal School purposes, and

WHEREAS, He maintained an active interest in the educational advancement of his city and state thruout his long and useful life, therefore be it

Resolved, That this expression of remembrance be entered upon the minutes, and the Secretary instructed to send a copy to his family.

Since our last meeting, Major S. S. Rockwood, one of the oldest and best beloved members of the Association, has passed away.

Major Rockwood devoted his life to the cause of education and contributed much to the upbuilding of Wisconsin schools. He was honest in his life, loyal to his friends, and faithful to the cause, and in his death, his friends and the schools have suffered an irreparable loss.

Resolved, That this token of respect be spread upon the minutes and a copy be sent to his family.

Resolved, That a vote of thanks be tendered to the President and officers of this Association for their labors in the interests of this meeting, also to the Principals' and Teachers' Associations of Milwaukee for the reception given visiting teachers.

Resolved, That the pupils, their teachers and their directors in the following schools receive the sincere thanks of this Association for the excellent music rendered during the convention: Port Washington School, Manitowoc High School, Wauwatosa High School, Treble Clef Chorus, St. John's Cathedral School, Milwaukee, Girls' Chorus, 15th Dist. School, Pupils 1st Dist. School.

Resolved, That we heartily endorse the action of the state legislature in providing for the inspection of rural schools, for school board conventions and for the teaching of agriculture in the common schools.

Resolved, That we urge the legislature next assembled to make further provision for the organization and maintenance of county training schools and schools of agriculture.

Resolved, That an expression of deep appreciation is due to the press of Milwaukee for services rendered in promoting the interests of this Association.

FRANK M. JACK,
LILIAN G. KIMBALL,
CHESTER W. SMITH,
Committee.

Mr. McKenney: I move that the report be adopted.

Mr. Schuler: I second the motion.

Motion unanimously carried.

Mr. McIver: It seems to me that that part of the recommendation in regard to the salary of the Secretary should be acted upon at this time. Those familiar with the amount of work and expense involved in the administration of that office know that a salary of \$100 is not a sufficient amount, and I would move you, Mr. President, that the salary of the Secretary be increased \$100, making the total salary \$200 instead of \$100.

(Many seconds.)

President: It is moved and seconded that the salary of the Secretary be increased \$100, making that salary \$200 per annum, instead of \$100, as at present. Are there any remarks?

The motion was adopted.

President: Under the head of unfinished business there is a proposed amendment to the constitution which has been on file for one year, which I shall ask the Secretary to read.

The Secretary read the proposed amendment as follows:

John F. Lamont and D. H. Schuler offered the following amendments to the constitution:

Resolved, That Article 4 of the Constitution of this Association be amended to read as follows:

"Article 4. The officers of this Association shall be a President, a Secretary-Treasurer, three Vice-Presidents, and an Executive Committee of five members, of which the President and Secretary-Treasurer of the Association shall be ex-officio members. The other three members shall constitute a continuous body, one member to be elected by the Association every year for a term of three years. The term of office of all the officers of the Association shall expire three months after the adjournment of the annual meeting."

That Article 5 be amended to read as follows:

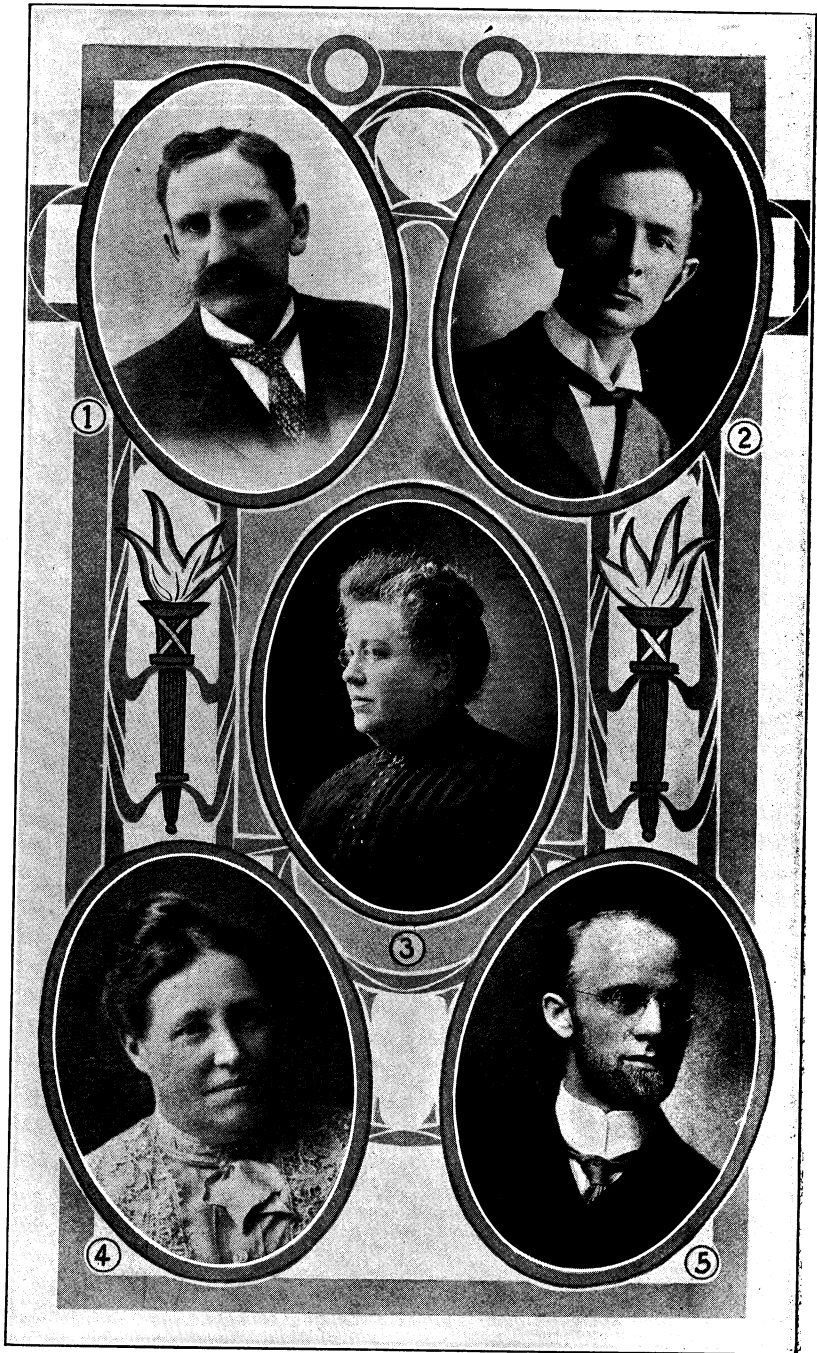
"ELECTION OF OFFICERS.

Article 5. The President shall be elected annually by the members of the Association by ballot, and the Secretary-Treasurer every three years by the Executive Committee. All other officers shall be elected by the Association on nomination made by a nominating committee."

That Articles 8 and 9 be combined and read as follows:

"SECRETARY-TREASURER.

Article 8. The Secretary-Treasurer shall keep due record of the proceedings of this Association and of its Executive Committee. The Secretary-Treasurer shall have immediate charge, under the direction of the President, of printing programs and of circularizing. He shall



1. G. C. SHUTTS, Executive Committee.

2. S. B. TOBEY, 2nd Vice-President.

3. MRS. MARY D. BRADFORD, 1st Vice-President.

4. CORA M. HAMILTON.

5. FR. RALPH ELMERGREEN.

cause the proceedings in whole or in part to be printed for distribution to members. He shall receive all moneys due the Association and shall pay out the same only upon the warrant of the Executive Committee of the Association, signed by the President. He shall keep his records in business form and shall submit the same to the Executive Committee for inspection at its second regular meeting."

That a new Article 9 read as follows:

"Article 9. On or before the first day of April each year the Secretary-Treasurer shall deposit with the President of the Association a surety bond in the sum of two thousand dollars, premium on the same to be paid by the Association."

President: Mr. Schuler left an explanation with me yesterday which I have unhappily lost, and I shall ask him to take the platform and give you a personal explanation in regard to it.

Mr. Schuler: Mr. Chairman and Fellow Teachers:—The author of this resolution is not present this morning and I who seconded it am called upon to perform my duty as sponsor.

I wish to say first that the resolution is an honest resolution; it is not a changeling—it does not embody any malicious spirit or intention to injure anybody.

The author of this resolution, Mr. Lamont, has been for years one of the most faithful members of the Association, and has occupied offices of high responsibility, and was for one year the Treasurer of the Association.

Mr. Lamont had three points in view in presenting this resolution.

He believed (as I do) that now, as the sum in the treasury is growing from year to year, the finances of the Association ought to be put on a business basis, that the financial agent of the society ought to be under bonds.

Secondly, we believe that the duties which are now divided between two officers would be more efficiently managed if they were combined under one head. Of course at this late day, it may seem a little ungracious to say that in the present and in the past the duties of these offices have not been most efficiently performed. While I recognize the earnestness and diligence of those people who have filled those offices and are filling them now, yet I feel that the efficiency of the discharge of the duties of the Secretary and Treasurer could be greatly increased by a combination of the two offices in one person.

Thirdly, it seemed to us that if the business agent of the Association was to be carefully chosen and the selection not left to the whims and caprices of a political canvasser (I use the word political in the nobler sense, that of pedagogical politics, you know; that the committee hav-

ing charge of the management of the business affairs of this association should elect our business manager.

I do not think I want to discuss the matter any further. I think the propositions stand out clearly for themselves. But I would like to disentangle this motion from some considerations, some prejudices, that seem to have enveloped it. I suppose they envelope it even more strongly now that we have elected a woman for Treasurer.

I wish to say this, that I believe that the resolution in itself is carefully worded and will bear no interpretation by which any person is injured or any one ruled out of office.

I was present here one morning when twenty-five members were present and somebody was ruled into office, but I would not lend my voice to that, nor will I support ruling anyone out of office.

I wish to say in regard to this resolution that I believe that it would be a wise thing for the interests of this Association, as I said before, if we disentangle this resolution from these considerations and prejudices that seem to have enveloped it recently.

If you will examine it carefully and disinterestedly you will find that it abolishes no office but one—the office of Treasurer. It does not affect the term of office of the Secretary but affects his duties. It is fully in line with the resolution you have adopted that the Secretary should be fully compensated for all the work that he or she may do.

In the absence of the prime mover of this resolution I do not feel that I want to say any more. I think I have done my duty as sponsor. I do not wish to urge it for adoption; I want to leave it to the wisdom of the Association.

Mr. Patzer: I move that this entire matter be referred to the Executive committee, with the understanding that that committee report on it at the next meeting of the Association.

(Many seconds to the motion.)

Unanimously carried and so referred.

President: We will now hear the report of the committee on Honorary Membership, which will be read by the secretary:

To the Wisconsin Teachers' Association:

Your committee on Honorary Membership would respectfully report as follows:

We recommend that the following well known educators from other states and others who have made helpful and inspiring contributions to the success of this meeting be named as honorary members of the Association:

John Kennedy, Batavia, N. Y.

Julia C. Lathrop, Chicago.

- Thomas Morgan, Chicago.
- Wm. L. Tomlins, Chicago.
- Alfred Bayliss, Springfield, Ill.
- Cora M. Hamilton, Macomb, Ill.
- Mrs. Alice Peloubet Norton, Chicago, Ill.
- Flora J. Cooke, Chicago.
- Miss Gail Calmerton, Fort Wayne, Ind.
- Rabbi Samuel Hirschberg, Milwaukee.
- J. M. True, Baraboo.
- Jas. Sheridan, Milwaukee.
- Amos P. Wilder, Madison.
- Dr. Frederick M. Edwards, Milwaukee.
- Hon. J. Q. Emery, Madison.
- Dr. Ralph Elmergreen, Milwaukee.
- Mrs. Laura Harney Rathbone, Chicago.
- Dr. Mary D. Pogue, Lake Geneva.
- Prof. W. H. Middleschulke.

Respectfully submitted,
 JULIA ROCKAFELLOW, Chm.,
 V. E. McCASKILL,
 WM. WILSON.

A motion was made by Mr. Schuler, seconded and unanimously carried adopting the report.

President: The report of Superintendent Harvey will now be read by the secretary.

The secretary read the report as follows:

L. D. Harvey, Wisconsin director of the N. E. A., in account with Wisconsin Teachers' Association, 1905:

Dr.	
To order on treasurer, C. W. Rittenburg.....	\$100 00
Cr.	
By expenses in maintaining Wisconsin headquarters at Asbury Park meeting, N. E. A., as per voucher.	\$64 20
500 badges	9 00
½ dozen placards	1 00
Book for enrollment of visitors at headquarters.....	30
By draft from treasurer, C. W. Rittenburg.....	25 50
	\$100 00
	\$100 00

Mr. L. D. Harvey, to Hotel Metropolitan, Dr.:
 To headquarters, room 5 days, and refreshments and service
 for reception to Wisconsin teachers..... \$64 20

Motion made, seconded and unanimously carried, accepting the report.

President: We will now proceed under the head of new business.

Mr. Buell: In connection with the report just filed, it is customary and a very wise plan to appropriate \$100 for the purpose of maintaining headquarters for the N. E. A.

Therefore, I move that this Association appropriate \$100 from which the manager representing this Association at the N. E. A. in San Francisco, may draw to maintain headquarters of the N. E. A. there.

Seconded and unanimously carried.

The question was asked as to what method was employed in the distribution of the proceedings of the Association.

President: I will ask the secretary to answer that question.

Secretary: In all cases where I received requests for proceedings, I sent copies. We had but 1,500 copies to supply 2,770 members of the Association. Consequently as I could not show favoritism, I held proceedings except where they were demanded.

The same situation will confront us this year. The state prints 1,500 copies of the proceedings; the balance this Association must either have printed itself or go without. I went to Madison to see the Secretary of State and asked him what arrangements we could make for the printing of the balance of the proceedings if necessary, and Mr. Houser gave me the following figures: The State will arrange with the printer to print for us with cloth covers, the same as we have now, an additional 1,500 copies for \$341, or we may have the same number bound in paper covers for \$152.

Now, in connection with this matter I want to say that the full 1,500 printed by the State Legislature last year have not been taken from my office. There are fully 300 copies on the shelves now. I will make every effort, if this Association will instruct me to do so, to distribute the proceedings to every member of the Association in any manner you may suggest to me. We have no instructions along this line but have distributed them in the city of Milwaukee as the former Secretary did. I wrote to the Normal schools and distributed there as many as were called for; outside of that I could do nothing. I made some calculations and find that I can send the Proceedings to schools of five teachers or over for about 25 or 50 cents expressage or freight, as the case may be. Under five teachers the best way to distribute would be by mail, and if the superintendents of city schools, or schools

of some size, will let me know how many they want, I shall be very glad to send the required number. There is considerable expense attendant on this, and I am sure that you will see that the evidence of those proceedings over there in the office bears me out in saying that there are a great many teachers who do not want these proceedings.

I should also like to know what you want me to do in regard to the balance of those proceedings, as the Constitution provides that we must have a sufficient number for every member of the Association.

Mr. Buell: I think the understanding is, as a rule, when teachers buy memberships, that they will get copies of the proceedings; and it seems to me that if it is worth while to print these proceedings at all, they ought to be in the hands of every member of this Association, and the sooner we make that effort, the sooner will we take a step in the right direction.

President: With 2,700 members and only 1,500 copies printed, how can you give each member a copy?

Mr. Buell: It seems we have outgrown our original proposition. The Legislature prints these at the state's expense. Now, would it not be well to have an additional amount printed by the Association, so that every member will receive a copy?

I move that the Secretary devise some plan by which extra copies may be procured and copies sent to every member of the Association at the Association's expense.

Mr. Shutts: I think the copies of the proceedings ought to be in the hands of the teachers within three months after the meeting, or as soon as possible thereafter. I believe this body wants these proceedings as soon as possible, and I move to amend the motion to the effect that we shall have these proceedings printed within three months after the close of the meeting.

President: In explanation of this matter I would say that this was a busy year with the state printer. He had to print I do not know how many bills introduced in the Legislature, but there was no obtaining the ear of the state printer until the Legislature adjourned. A business like our business had to await its turn while the state printer was engaged in carrying out the orders of his immediate superiors, to do the necessary printing for the Legislature, which was in session during a large portion of the early part of this year. Now I think the constitution provides that the copy shall be in by the 1st of April, and the motion of the gentleman will be contrary to the reading of the constitution, unless that is also amended. I do not believe that it is wise to pass a law compelling something to be done which is impossible, and I do not believe that it is possible to have these proceedings printed by the first of April; but I do think that it is quite possible

and certainly desirable to have the proceedings in the hands of members at an earlier date than was the case this year.

Now the motion has been made instructing the Secretary to secure a sufficient number of copies to give each member of the Association one, and that that copy be sent to the members of the Association at the Association's expense. Has that a second?

Motion seconded.

Mr. Nelson: It is never a pleasant thing to attempt to talk against a proposition that seems at the outset to have met with general approval on the part of a body. But there are some points that present themselves to me which seem to be important. The suggestion that our secretary makes seems to me to be significant and not entirely due to a misunderstanding.

Racine sent to Miss Williams for a sufficient number of copies to supply teachers. She sent to us our correct ratio—not enough for all the teachers by about 25 copies. The several schools were notified that those copies were there. It is six weeks since we got them, and it is my recollection that 25 copies are still in the office of the Superintendent waiting to be called for. Now 1,500 copies of these proceedings being distributed to the 2,500 members makes it possible for those especially anxious to have copies to get them, and I believe furthermore that the schools wanting copies should send for them, paying the expense, as has been done for many years.

I believe further that \$345 spent for the bringing into the Association of superior talent, and putting that inspiration six, seven or eight times before the teachers of this Association, will do every teacher in the Association more good than the Association can get out of the printing of the 1,500 extra copies. You are now paying your secretary \$200, you are appropriating \$100 to the N. E. A., and now you suggest taking \$400 or \$500 for printing proceedings.

Mr. Landgraf: When the Legislature made an appropriation to print 1,500 copies that was long years ago, and I think they would very willingly print 3,000 copies now. I think every member should have a copy and each copy should be sent by mail to the individual; but I think that the Legislature should be petitioned to print 3,000 copies instead of 1,500. As there will be a session of the Legislature between now and the next State Association meeting, that can be easily arranged. I believe all that needs to be done is to bring the matter to the attention of the Legislature and they will order 3,000 copies printed; and a committee of this Association should be placed in charge of the matter.

Mr. McKenney: Our 2,700 membership changes location frequently. I presume one-fourth or one-fifth of our membership will change ad-

dresses within the next six months. It is a very difficult task for the secretary to keep track of the membership; so I am inclined to think it is unwise to appropriate this money for a doubtful purpose. It seems to me that there ought to be some way devised whereby those who desire the proceedings can get them. I think one-third of the copies thus sent out would be lost in the mail.

Mr. Buell: Another phase of this question, and one that influences me to make the motion more than anything else, is that we have a large membership from localities remote from Milwaukee, a membership that cannot attend the meetings, and the only inspiration and return they get for their membership fee is a copy of our Proceedings. Now the Legislature appropriates money for 1,500 copies. I am of the opinion that if an arrangement were made with the state printer to print 1,000 at the same time the 1,500 are printed, better terms could be arranged. The 1,500 extra would have to be printed now, of course, from new type, because I suppose the type has been distributed; but another year it would seem possible to make an arrangement with the state printer in connection with the Secretary of State, to have a thousand extra copies printed very much cheaper. I think every member of this Association should receive a mailed copy of the proceedings.

Secretary: These are the figures that the state printer gave us on the proceedings of 1905; that is the minimum for the additional copies for the coming year.

The proceedings for 1904 would cost you a great deal more. These figures do not include paper nor any stock used. The Secretary of State went through the figures in every possible way to see how cheaply we could get additional copies, and the lowest figure obtainable was \$152 for paper covers and \$341 for cloth covers.

President: Then as I understand it, it is impossible to get the proceedings of 1904.

Secretary: Only by having them reprinted. I have no figures, but it will probably be \$50 or \$60 more than the \$341. A thousand copies would supply the demand for the 1904 proceedings.

President: I think that the gentleman who spoke here (Mr. Landgraf) made a remark which covers the case. There is no doubt the Legislature will give us copies if we apply in time. I took the matter up with the Assembly and Senate committees on Education, but they said that tho they would be very glad to comply with our request, they feared that we were too late. I saw them, however, at the earliest possible opportunity. There is no doubt if the committee on Legislation will take this question up with the Legislature, they will increase the number of copies, because the number was placed at 1,500 arbitrarily, years ago, when that number amply covered the membership.

I was told by one of the older members of the Association that it was not very long ago when 300 members was considered a full attendance at a convention. If that is so, you will see that there was no niggardliness in naming 1,500 as the maximum number.

I will ask Mr. Euell to state his motion again.

Mr. Buell: My motion was simply to devise a means to get copies in the hands of every member. If the Legislature will do that for us, I would be very glad to withdraw my motion with the consent of my second, as that meets my views exactly. The only thing that I am afraid of is that if we get to dickerling too much with the Legislature, they may think we are a rich institution and withdraw the present arrangement. (Laughter.)

(Motion withdrawn with consent of second.)

President: It might be in order to instruct the committee on Legislation either personally or by resolution to take up that question at the earliest opportunity.

Mr. Koeppel: I believe, Mr. President, that this matter of the proceedings and the furnishing of Proceedings to members has been a sore spot for years. I have no doubt that the members and prospective members of this Association have for years been promised copies of the proceedings. We know that some of the members have received copies for years and others have not; and what has just been mentioned is certainly true, that many teachers who are unable to attend would get inspiration by at least reading what has been presented.

It has been stated that this money might with greater profit be spent for attracting talent for this convention. But we must not forget that there are comparatively few educators in Wisconsin able to attend. The few get the advantage of superior talent and many others do not. "There is no motion before the house. Does the gentleman desire to make a motion?"

Mr. Koeppel: I make the motion that the Executive committee be instructed by this Association to find a means of providing every member of this Association with a copy of the proceedings from year to year,—not bound but in paper covers, and with the omission of all unnecessary embellishment that costs money and is of no particular value.

Motion seconded and carried unanimously.

The secretary read the following communication:

In accordance with the provisions of Article 10, of the Constitution, I propose an amendment to the Constitution, to be voted upon for adoption or rejection at the next annual meeting.

Amend Article 5 of the Constitution so that it shall read as follows:

ARTICLE 5—ELECTION OF OFFICERS.

The President, one member of the Executive Committee, and all other officers of the Association, except the Secretary, shall be elected each year; the Secretary shall be elected every three years. The election of officers shall take place in the following manner:

Upon the second day of each annual meeting of this Association, at five o'clock in the afternoon, the members present that day shall meet,—those present from each congressional district of the state meeting separately,—for the purpose of selecting a Nominating Committee, which shall consist of three (3) members from each congressional district.

Those present from each congressional district shall, upon meeting, proceed to select without nominations, first by informal ballot and second by formal ballot, from among the members of the Association from that district, three members of a Nominating Committee.

The members of the Nominating Committee thus chosen shall meet immediately after their election and nominate persons for the various offices to be filled by the Association at that meeting.

This committee shall report at the evening session of the Association held on the same day; this report shall be subject to amendment, and when adopted the several persons named therein shall be declared duly elected to the office for which each was named.

The hour and place of the meeting of the members of the several congressional districts and the place for the meeting of the Nominating Committee shall be fixed by the Executive Committee and announced in the program.

C. G. PEARSE.

Milwaukee, December 29, 1905.

President: It will lie over for one year under the constitution.

A girls' chorus from the 15th district school, Milwaukee, rendered a selection under the direction of Mrs. Grace Adams which was received with great applause.

President: Nothing is too good for these little people. They live in June all the time. (Applause.)

Continuing new business, the secretary read a communication from President Lindemann of the Milwaukee School Board, regarding the 15th annual convention of the International Kindergarten Association to be held in Milwaukee April 4, 1906.

The communication is as follows:

Milwaukee, December 28, 1905.

To the Wisconsin State Teachers' Association, Milwaukee, Wis:

Fellow Teachers: The Thirteenth Annual Convention of the Inter-

national Kindergarten Association will be held in Milwaukee from April 4-7, 1906. This convention will bring together, not only the leaders in the kindergarten movement, but also many teachers interested in advanced educational thought, from all parts of the country.

The undertaking is a big one, and to insure its success the co-operation of most of the educational associations of the state has been promised. The kindergartners are loyal and active members of the Wisconsin State Teachers' Association, and I, as president of the Milwaukee School Board, ask that you lend a helping hand in making the April convention a great success.

Very respectfully yours,

AUG. S. LINDEMANN,

President Milwaukee School Board.

Mr. McKenney: I do not know how many are familiar with the International Kindergarten Bureau. It represents the organization of kindergartens in the United States and Canada. It is a great institution and will bring into the city of Milwaukee from 400 to 800 people, among these the noted leaders of kindergarten work in the United States and Canada. To take care of this convention in Milwaukee will cost some \$1,500 or \$1,600, but we think it is well worth while to spend this money. I am sure the schools of Wisconsin will profit by the coming of this great body of kindergartners. But it is not simply money considerations that we urge on you, but we ask for your co-operation and for the co-operation of the superintendents of the state of Wisconsin, to make it possible for the kindergartners of the various schools to be here in attendance at the convention.

Another thing is the financial side. We need assistance. The Executive Committee of this Association has looked over the condition of our finances and recommends that you lend some financial aid in this matter.

I therefore move that this association appropriate \$25, or such sum as shall be deemed proper by the Executive committee, of its funds to the use of the committee of Arrangements of the Kindergarten Association, for the kindergarten meeting to be held April 4-7, 1906, in this city.

Motion seconded.

Mr. Webb: I do not think \$25 is enough and I move to amend the motion by substituting \$100 for the \$25.

Mr. McKenney: I think that matter should be decided largely by the Executive committee. The kindergartners would be glad to have \$100 if you can afford it.

Mr. Webb: We were just talking about appropriating \$500 or \$600 for additional copies of the proceedings.

President: But we did not do it. We have our own association to support. We are also supporting a department at the N. E. A., and the calls upon our treasury are constant during the year. I do not begrudge any support to this worthy object stated in the motion, but to say that the money shall be used in any such amount for this, that or the other thing is perhaps to cripple your next year's meeting, and I think the gentleman who made the motion knew what he wanted and asked for it. He has never been accused of asking for less than he wants; and still I appreciate the generous impulse of the gentleman who moved the amendment. I should say that the suggestion that it be left to the discretion of the Executive committee is wise, because you cannot tell yet how much money will be needed for the expenses of this meeting.

Amendment seconded.

Mr. Ulrich: I move to amend the amendment by placing the appropriation at \$50. Seconded.

Mr. McKenney: I would like to have the original motion stand—\$25, or such addition to that sum as in the wisdom of the Executive committee could be spared for that purpose. I do not believe it is wise to fix the sum. Maybe we ought not to spend \$50. I am willing to leave the matter in the hands of the Executive committee.

President: It may be quite possible for the Executive committee to allow more.

Both amendments withdrawn.

President: The motion is that the Executive committee shall appropriate \$25 or as much more as it feels itself able to appropriate for this purpose.

Unanimously carried.

An address on "The Making of a Rural Teacher," by Cora M. Hamilton, Principal Training Dept. Southern Illinois Normal School, Macond, Ill., was read by Mr. Alfred Bayliss because Miss Hamilton was very hoarse.

Following the reading of this paper, E. W. Walker addressed the meeting on "The Problem of the State and Day School for the Deaf." Then followed two discussions on this subject, one by B. E. Nelson, Racine, and the other by Frances Wettstein, Milwaukee Day School for the Deaf.

Dr. Ralph Elmergreen was then introduced by the president, who said: Last but by no means least I have the pleasure of introducing Dr. Ralph Elmergreen, who will address you on "The Duty of the Teacher to the Community."

Dr. Elmergreen: Ladies and Gentlemen and Fellow Teachers:—Were I to prescribe to you now in the capacity of your physician, I should tell you all to go home to eat and rest, and never come back.

I came down here to tell you teachers where to get off, but the next time I appear before you I shall insist on having your honored president tell me where I get on.

President: Before declaring this meeting adjourned I wish to render my thanks to all those who have helped us this year in making the meeting as successful as it has been, and I particularly wish to render my thanks to the local committees and the committee on Nominations for their arduous and effective labor.

Adjourned sine die.

KATHERINE R. WILLIAMS,
Secretary.

PROCEEDINGS OF DEPARTMENTS.

REPORT OF PROCEEDINGS OF THE SUPERINTENDENTS' AND SUPERVISING PRINCIPALS' ASSOCIATION.

President—Allen B. West, Lake Mills.

Vice-President—Wm. Kittle, Oconomowoc.

Secretary and Treasurer—J. W. T. Ames, River Falls.

Plankinton Arcade, Tuesday, Dec. 26, 1905.

The thirteenth annual meeting of the Association was called to order at 10:05 A. M. by the president, A. B. West of Lake Mills.

The minutes of the last annual meeting were read and approved.

The following committees were appointed by the president:

Committee on Nominations—Superintendents, H. A. Snowdon, Rice Lake; P. J. Zimmers, Kenosha, and F. A. Lowell, Rhinelander.

Committee on Finance—Superintendents, G. F. Loomis, Waupun; W. S. Freeman, Mondovi, and I. B. Davis, Delavan.

The report of committee on Mutual School Insurance was made by President West.

Your committee on Insurance Investigation would respectfully report:

We have continued the investigation of the subject, "School property as a fire insurance risk." From this and from the former investigation we are satisfied that school property on the whole is an excellent fire insurance risk. School houses are usually good buildings; are isolated from other buildings, hence are not exposed to outside fires; have fires only for heating purposes; and are not subject to the moral hazard of being set on fire for the insurance.

Soon after the annual meeting of last year, your committee consulted the insurance commissioner, Zeno M. Host, as to a possible relief from the present rate charged for insurance. He replied in part as follows: "I know of no way to reduce the cost of fire insurance, for under the present law—section 1943b, statutes of 1898—boards of fire underwriters and companies represented by agents (members of said boards) may legally enter into any lawful contract or agreement to

establish or maintain rates, which is done by agents of stock fire insurance companies thruout the state."

The insurance commissioner suggested the drafting of a bill which, when enacted into a law, would permit the organization of mutual school insurance companies. Acting upon this suggestion, your committee with the aid of C. N. Brown, attorney, drafted a bill which, after being approved by the commissioner, was introduced into the Assembly and in due time became a law.

Your committee had 500 copies of the bill and 500 circular letters struck off. These with brief personal letters were sent to the city and county superintendents. The responses have been meager, yet considerable interest is manifest, and several thousand dollars of insurance has been asked for and more applications are promised.

As \$250,000 of applications must be received before a company can be organized under the law your committee would recommend:

1. That each member of this Association immediately bring the matter to the attention of his Board.
2. That a committee of three be appointed by this Association to solicit and receive applications.
3. That this committee be instructed to present the matter of Mutual School Insurance to the State Teachers' Association.
4. That an appropriation of \$18.40 be made to cover the expenses of the committee for the present year.
5. That an appropriation of \$15.00 be made to cover the expenses of the committee for the coming year.

All of which is respectfully submitted.

ALLEN B. WEST,
PATRICK DONNELLY,
C. C. PARLIN,

Committee.

It was moved and seconded that the report be adopted. After discussions by A. F. Loomis, Waupun; I. C. McNeil, Superior; M. N. McIver, Eau Claire, and others, the motion was carried and the report adopted.

Moved, seconded and carried, that a committee of three be appointed, President West to act as chairman, to continue the work as called for in the report. The committee so ordered is chairman, A. B. West, Lake Mills; D. O. Hibbard, Racine; M. N. McIver, Eau Claire.

An announcement was made of the banquet to be held at the Seventh District School at 6 P. M.

For the first number on the program, C. G. Pearse, superintendent of

schools in Milwaukee, presented a paper on "How the Superintendent May Help the Teacher." Superintendent Pearse said in part that the teachers need encouragement and backing in any and all times of discouragement and attack. Intelligent criticism and helpful suggestion are of great aid to teachers, especially beginners, as the theory that teachers come to their work, prepared as the journeyman workman, does not always prove out in practice. Very often they have the necessary size and information as to subject matter but cannot use the knowledge to the best advantage. Here the supervisor steps in. A practical demonstration of the way the work should be done is sometimes a necessity. The individual difficulties peculiar to grades may be discussed at sectional meetings and larger problems may be treated by discussions or topically before the entire corps. But the superintendent's province should be to establish ideals, leaving the individual teacher to work out the detail work, render his inspiring and directing influence to the work.

The second number on the program, "Proper Supervision of the Playgrounds," was presented by M. N. McIver, superintendent of schools at Eau Claire.

In his discussion of this subject Principal Kreuger of Milwaukee suggested the presenting of new games, umpiring of old games and disputes, and a general interest and supervision without any suggestion of oppressive dictation. This supervision will correct habits of selfishness and greed and develop a regard for the rights of others. Vacant lots may be utilized for more play space; they may be supported and supervised by public spirited persons and be a means of keeping young boys off the street. Mr. Kreuger explained the management and value of a public playground operated by the Outdoor Art and Improvement Association in Milwaukee. The grounds are beautified with shrubbery and equipped with suitable apparatus for outdoor gymnastics and are adjacent to a natatorium. The result is very gratifying as the children of the neighborhood patronized it extensively.

Mr. Patzer read a part of a report on the Teaching of Language in the Grades. He read the parts relating to Story Telling and Picture Reading.

He declared that in the early years of childhood language is learned thru the ear, not the eye. Hence, in the primary grades story telling is the most important phase of language teaching. Fables, fairy tales, folk lore stories and myths come first. They interest children and have a classical value when maturity is reached. Stories depicting heroism, truth, honesty, etc., should also be introduced.

Beginning with the fifth grade, the domain of biography should be entered. The characters selected should illustrate by their aspirations and deeds, the ideals of the age in which they lived. As a precursor of biographical stories should be included a few stories from the Old Testament. The Biblical tales naturally bridge the chasm between mythology and biography. Biographical stories pave the way for text book instruction in American History.

The method of story telling is very important. Before attempting to tell a story the teacher must know the story so well that she is able to abandon herself to the dramatic touches in response to the ever changing moods of little children.

Many stories should be told with no expectation of re-telling on the part of the pupils, but a selected few should be worked over carefully in class to cultivate the critical, reflective attitude of pupils. Stories should also be told in a way to have pupils exercise their creative imagination. This may be done by telling a part of the story and having the pupils continue the story, the teacher later on picking up the thread of the story where she left off.

Picture reading is on a higher plane than story telling. Translation of the picture into words is an exercise of the creative imagination and thinking power. Care should be exercised in the selection of pictures for picture reading. Those that suggest action and contain but a single plot are best. Much depends upon the teacher whether she will be successful in picture reading or not. The questions on the picture must be such as to bring out the thought.

Lack of time precluded the reading of other parts of the report which dealt with:

- (1) Written reproduction of stories.
- (2) Written work in connection with knowledge subjects.
- (3) Letter writing and original compositions.
- (4) Mechanics of language and formal grammar.

At 12:15 the meeting adjourned to 2:00 P. M.

The meeting reconvened at 2:15; President West in the chair.

The opening paper for the afternoon session was presented by President I. C. McNeill of Superior State Normal, on "The Ideal Superintendent." "The Ideal Superintendent' is one of God's best men possessing the training of schools and experience." In these days of specialization it is admitted that the broader the foundation the safer the result to be attained and so the safest educator is the one both college and normal trained. (There are some great educators who have had only one training and some who have had neither, but were gifted in the beginning. Had they had training what might not have

been the result?) Graduation does not make the educator, it but paves the way, giving guidance, eliminating error and promoting efficient service, sympathy and moral strength. The superintendent should rise thru the various stages, like the practical journeyman, railroad man, etc. He should be in touch with world forces; be a business man; be a broad-gauged conservative; be wholly in sympathy with the interests he serves; be morally, physically and in personal appearance the clean, wholesome, purposeful man; be above all and in all a gentleman. Mr. McNeill illustrated his various types of superintendents by calling attention to such men as Jordan, Maxwell, Greenwood and others well known in American education. In closing Mr. McNeill said:

"In the words of another, the ideal superintendent is one 'who has lived well, laughed often, and loved much; who has gained the respect of intelligent men and the love of little children; who has filled his niche and accomplished his task; who has left the world better than he found it, whether by a task performed, or a rescued soul; who has never lacked appreciation of earthly beauty or failed to express it; who has always looked for the best in others and given the best *he* had; whose life was an inspiration; whose memory a benediction.'"

A short recess was taken to enable members to pay their dues.

After recess President R. H. Halsey of Oshkosh State Normal School, read a paper on "How to Get the Necessary Preparation for a Supervising Principal."

Mr. Halsey pointed out the need for theoretical preparation for the young and inexperienced principals as in other departments. The three essentials for a principal are ability to meet men, tact and saving common sense. Scholastic attainments do not always produce these but the addition of the qualities the Ph. D. degree should represent are of great value to the superintendent. The value of the school of practice to the intending teacher has been established by years of actual test, and it has been demonstrated beyond question that there is no part of the preparation of the teacher that is of greater help to her when she gets into actual service than the teaching under the criticism of a thoroly competent supervisor of practice. It would seem that the same might be admitted to be true for the person making preparation for teaching in a secondary school, and yet in this country as yet only two of the schools that I know of professing to prepare secondary teachers especially have successfully grappled with the problem of furnishing adequate practice teaching for such

persons. While it is true that many of the problems of the supervisor are of such nature that no good system of schools would desire to furnish a number of its schools as a practice department for intending supervisors, yet it would seem as tho there was much of the preparation especially designed for supervisors that could be greatly facilitated by an arrangement by which these students of supervision could be given privileges in certain schools of a large city system, thus presenting them with some of the simpler problems of the supervisor. Nevertheless, the preparation for supervision must to a considerable extent remain in the future as it has been in the past, a matter wherein the personal equation of the intending supervisor is the principal factor in the problem, and thru teachers' meetings, thru careful self-criticism of his own teaching, and thru actual visitation and limited criticism of his assistant teachers the preparation of the supervisor must be gained.

The Association then proceeded to the election of officers. Upon a motion of F. A. Lowell, Rhinelander, which was seconded and carried. That the rules be suspended and the Secretary be instructed to cast the ballot of the Association for W. H. Hickok, superintendent of schools, Antigo, for president for the ensuing year, Superintendent Hickok was elected president.

The committee on Nominations reported resolutions nominating Principal J. E. Hale, Augusta, vice-president, and Superintendent G. F. Loomis, Waupun, secretary-treasurer. On motion the report was adopted and the nominees declared elected.

Committee on Finance recommended allowing bills for language investigation and bills for printing and postage. On motion the recommendations were adopted.

On motion H. C. Buell of Janesville and H. L. Terry, Madison, were re-elected members of the committee to investigate work in the grades.

A motion that the State Superintendent be requested to have printed for general distribution the report on language work was carried.

The motion was made and carried that the president-elect, W. H. Hickok, represent the Association at the N. E. A. at San Francisco.

This concluded the business meeting.

Prof. C. F. Viebahn of Watertown gave the report on Work in Geography in which he summarized his investigations, pursued in a large number of schools, and suggested various ways of improving the work in this subject.

At 4 P. M. the meeting adjourned.

J. W. T. AMES,
Secretary.

COLLEGE, NORMAL, HIGH SCHOOL SECTION.

Officers: Chairman—F. S. Hyer, Institute Conductor, State Normal School, Stevens Point.

Secretary—Laura Barber, Instructor High School, Watertown.

Treasurer—H. E. Loveland, Principal High School, Darlington.

The College, Normal, High School Section held its meeting in the assembly room of the Normal School on Wednesday afternoon at 1:45 o'clock, F. S. Hyer of the Stevens Point State Normal School acting as chairman.

The program opened with music by the Manitowoc High School orchestra. Then followed a paper by B. B. James, superintendent of schools, Waukesha, on "A Proposed Change in Our System of Credits," in which Mr. James advocated the giving of major or minor credits in the various branches according to the scope and efficiency of the work done by the pupil. The paper was discussed by A. W. Tressler of the University of Wisconsin, who heartily indorsed the plan as a step in the right direction, claiming that it is a rational extension of the elective system, offers an improved system of recording the results of pupils' work, attempts to meet the needs and capacity of the individual pupil, and will effect a much-needed, radical modification in methods of instruction.

At the close of this discussion the department adjourned, and conferences were held in Language, Science, History and Mathematics. At 4.30 all re-assembled to listen to reports by the various chairmen.

The Language conference, presided over by F. W. Meisnest of Madison, opened with a paper by W. G. Bleyer, assistant professor of English, University of Wisconsin, on "The High School Course of Study in English," in which he presented a most carefully worked-out course in Reading and Composition, suggesting that the time during the first two years be equally divided between these two phases of the work in English, while the work of the third and fourth years consist of Composition (1-5 to 1-10), History of Literature (1-5 to 1-10), and Study of Masterpieces (3-5 to 4-5). Composition work was discussed by S. A. Lynch, principal High School, Superior, who claimed that the pupil could become proficient only by constant practice in writing, that the teacher should have some simple system of signs to indicate errors, and that the work of revision should always be done by the pupil himself.

Miss Ashman of the Menomonie High School spoke on "The Study of Masterpieces," advocating that the first reading of the classic, in

its entirety, be done by the teacher, that analysis of the selection be confined to parts of especial difficulty, and that after the masterpiece has been sufficiently studied, individual assignments be made, and the selection read aloud by the pupils in the class-room. The chief aim of the course in Reading, she contended, should be to arouse the pupils' interest, further self-expression, and add to his general culture.

A. D. Tarnutzer, principal High School, Sheboygan, concluded the Language conference with a plea for the extension of the German courses in the high school to three or four years.

HIGH SCHOOL COURSE IN ENGLISH.

First Year.

- A. Composition (one-half); Purpose: to develop spontaneity, fluency, and accuracy of expression.
 Reading (one-half); Purpose: to teach pupils to get the thought accurately.
1. Grammar; Punctuation, Capitalization.
 1. Work based on errors in pupils' written work.
 2. Occasional review of general principles.
 2. Sentence.
 1. Grammatical construction.
 2. Unity.
 3. Coherence.
 3. Paragraph.
 1. Length.
 2. Unity (topic, selection of material).
 3. Coherence (order, connection).
 4. Forms of Discourse.
 1. Narration.
 2. Description.
- B. Reading: Prose—Short Stories and Descriptive Sketches, such as those of Hawthorne, Irving and Thoreau.
- C. Composition.
1. At least one and not more than two one-paragraph compositions of from 150–200 words, every week; to be carefully corrected by teacher and to be rewritten by pupil.

Second Year.

- A. Composition (one-half).
 Reading (one-half).
1. Sentence.
 1. Length (long, medium, short).
 2. Rhetorical form (loose, periodic, balanced).

3. Unity.
 4. Coherence.
 5. Emphasis.
2. Paragraph.
1. Unity.
 2. Coherence (sub-topics, order, connection).
 3. Emphasis (selection, proportion, position).
 4. Methods of developing topic.
3. Words.
4. Figures of Speech.
5. Forms of Discourse.
1. Narration.
 2. Description.
 3. Exposition.
- B. Reading: Prose—Short Stories, Descriptive Sketch, Essays, such as those of Irving (Sketch Book, Alhambra), Holmes (Autocrat), Addison and Steele (Spectator Papers).
- C. Composition.
- (1) At least one and not more than two, one-paragraph compositions of from 150–200 words, every week; (2) and one four or five paragraph composition of from 600–800 words, every six weeks; both long and short compositions to be carefully corrected by teacher and to be revised or rewritten by pupil.

Third Year.

- A. History of English Literature (one-fifth to one-tenth).
Study of Masterpieces (three-fifths to four-fifths).
Composition (one-fifth to one-tenth).
- B. Study of Masterpieces: For class work and outside reading: Shakespeare (Merchant of Venice), Milton (Shorter Poems), Dryden, Pope, Goldsmith, Gray, Bunyan, De Foe, Addison and Steele, Burns, Scott, Wordsworth, Coleridge, Lamb, Keats, George Eliot, Dickens, Thackeray, Tennyson, Arnold, Browning.
- C. Composition.
- (1) One short composition, not exceeding 500 words; (2) and one long theme of from 700–1,000 words every six weeks; to be carefully corrected by teacher and to be rewritten or revised by pupil.

Fourth Year.

- A. History of English Literature (one-fifth to one-tenth), First Semester.

History of American Literature (one-fifth to one-tenth), Second Semester.

Study of Masterpieces (three-fifths to four-fifths).

Composition (one-fifth to one-tenth).

- B. Study of English Masterpieces: For class work or outside reading: Chaucer (Prologue), Old English Ballads, Malory (Morte d'Arthur), Shakespeare (Macbeth), Spencer, Bacon, Milton (Paradise Lost, I and II), Boswell Johnson with Macauley's Samuel Johnson, Burns with Carlyle's Burns, Burke (Conciliation with America), Shelley, Byron, Ruskin, Tennyson, Browning, George Eliot, Thackeray, Dickens.
- C. Study of American Masterpieces: For class work and outside reading: Irving, Poe, Hawthorne, Cooper, Longfellow, Bryant, Whittier, Emerson, Lowell, Holmes, Thoreau, Webster.
- D. Composition.

- (1) One short composition, not exceeding 500 words, every week;
- (2) and one long composition of from 800 to 1,200 words once in eight weeks; to be carefully corrected by teacher and to be revised or rewritten by pupil.

In the Science conference, of which G. W. Swartz of Monroe was chairman, the first subject under discussion was, "Is It Necessary or Justifiable to Give Double Periods Daily to Physics?" L. F. Miller of the University of Wisconsin, and C. E. Case of the Normal School, Milwaukee, who were to have taken part in the discussion, were unable to be present. G. J. Balzer, instructor in Physics, presented the plan of work followed in the West Division High School, Milwaukee. Only five periods weekly are allotted to Physics in this school, though the speaker felt that seven would be better. The discussion of the subject by F. A. Harrison, principal, Brodhead, brought out the fact that more than sixty per cent of the high schools in Wisconsin are giving ten hours weekly to this subject, whereas, Physics is no more valuable than other studies in the curriculum.

"The Laboratory Note Book: Problems Arising and Some Suggestions for Their Solution" was the subject of a paper by C. G. Stangel, principal, High School, Sturgeon Bay. The test of a good note-book, he maintained, should be: (a) Is the work logically written up? (b) Is it complete? (c) Is neatness a factor? (d) Does it show a development of thought, of the critical faculties, on the part of the pupil? (e) Does it give appreciable, permanent results by the classroom test? Laboratory note books, it was agreed, should be gotten into such condition that they will be accepted by colleges as entrance work.

The question, "Is the Tendency to Emphasize the Microscopic Side of Botany Teaching in the Right Direction?" was discussed by Albert Salisbury, president, State Normal School, Whitewater. He urged that there was an over-emphasis in the wrong direction, that the study of microscopic organisms is a work ill-adapted to the interests or capacity of the adolescent stage of mental development. He would have the high school course in Botany first of all stimulate an appreciation of nature as expressed in the plant world. With this he would conjoin as much of the scientific interest as possible, that the pupil may know common plants in their relations. He would aim to develop a wider intelligence in the line of industrial and commercial Botany, and would give more attention to the study of plant reproduction. Thomas R. Lloyd-Jones, superintendent of schools, Wauwautosa, in his discussion of President Salisbury's paper, testified to the great interest in the subject of Botany developed in the pupil by the use of the microscope.

"The Intellectual Shortcomings of Science Teaching in the High School" was the subject of a paper by George L. Collie, Dean, Beloit College. He showed that there was a tendency to transfer pupils too hurriedly from the grade type of work to the science type; that not enough attention was given to careful observation; that phenomena were not correlated; that knowledge was not arranged in an orderly way; and that science was not given a human interest. This paper was discussed by A. H. Sage, of Oshkosh.

The History conference, E. T. Smith of Appleton, acting as chairman, was opened with the report of the committee appointed to investigate and report upon United States History and Civics as taught in our schools. The report was discussed by Superintendent Hooper of Ashland, who recommended that it be published and circulated.

A. G. Sanford, State Normal School, Stevens Point, in his paper on "The Relation of United States History and Civics," held that the two subjects should be correlated whenever possible; that in Civics the consideration of clauses which have resulted from some historical event should follow the study of the event. For example, the study of the twelfth amendment should follow the election of Jefferson and Burr.

In his paper on "Debates in Civics Classes," E. T. O'Brien, principal of schools, Berlin, favored the debate if not given too frequently, on the ground that it is an aid to the pupil in forming correct judgments. W. H. Schulz, superintendent of schools, Merrill, in his discussion, summarized the points in favor of class room debates.

The subject of the next paper, by B. O. Kinsman, State Normal School, Whitewater was changed to "The Teaching of Civics with a

View to Citizenship" in which emphasis was laid on the personal side of civics. C. C. Parlin, principal, High School, Wausau, showed how much could be done to make the child realize that he is a part of the state.

In his report on the Mathematics conference, the chairman, John V. Collins, Normal School, Stevens Point, criticised the Wisconsin teachers of Mathematics for not adopting new methods of instruction, claiming that Wisconsin is not taking part in the general awakening along this line of work.

The report of the committee on "A Revision of the Content of Geometry" was discussed by Richard E. Krug, North Division High School, Milwaukee. He held that the text-book should be used only in review; that there should be a large number of original exercises; that the lesson should be presented analytically and inductively and recited synthetically and deductively. In the discussion of this paper the point was made that the doctrine of limits is too difficult for second year pupils; that the problem may be started in the second year, but that the study of incommensurables should be postponed until later.

C. F. Viebahn of Watertown read a paper on "The Teaching of Algebra in the High School. Its Defects and Their Remedies." He claimed that lack of a definite purpose is one of the chief defects in the teaching of high school Algebra; that there is too much monotonous drill work; that the work is too mechanical; that mental and sight work should predominate in the class room; that algebraic processes should be based upon principles thoroughly understood. The paper was discussed by G. C. Shutts, institute conductor, Whitewater, who urged the teaching of algebraic formulae. A general discussion followed.

After the reports of the various conferences had been presented a motion was made and seconded that the Chair appoint a committee of five, with Mr. Collins as chairman, to recommend as to the content of Algebra in the high school. Carried. Mr. Hyer appointed the following committee: Joseph V. Collins, Stevens Point; C. F. Viebahn, Watertown; Richard Krug, Milwaukee; Prof. E. Skinner, Madison; H. L. Terry, Madison.

A motion was also made and seconded that this section recommend to the general session the printing and distributing of the report of the investigating committee on the Teaching of United States History and Civics. Carried.

The meeting was then adjourned.

LAURA BARBER,

Secretary.

REPORT OF CITY GRADED SCHOOL SECTION.

Officers: Chairman—J. T. Hooper, Superintendent of Schools, Ashland.

Secretary—Elizabeth R. McCormick, Grade Teacher, Superior.

Treasurer—H. G. Hayden, Principal Ward School, La Crosse.

The meeting was called to order Thursday, Dec. 28, at 2:00 P. M., by the chairman, J. T. Hooper, of Ashland.

The following program was then presented:

Music—Intermediate Grades, Eighth District No. 2, Milwaukee.

“The Necessity of Physical Training in the Grades,” N. J. McArthur, Director Stout School Physical Training, Menomonie.

Discussion—Opened by Miss Grace Shepardson, Supervisor Physical Training, State Normal School, Oshkosh.

“The Problems of the Intermediate Grades,” Principal Wm. H. Orme, Ashland.

“What Things Are Essential and What Should be Optional in the Grades?” P. J. Zimmers, Superintendent of Schools, Kenosha.

The meeting was opened with singing by the pupils of the intermediate grades of the Eighth District, No. 2, Milwaukee. The chorus was led by Miss Carrie L. Vollmar, and the pupils sang three selections, “Vesper Bells,” “Boating Song,” and “Fly Away Birdling.”

The next number on the program was a paper by N. J. McArthur of Menomonie on “The Necessity of Physical Training in the Grades.” In substance he said:

A child confined to a school room five or six hours a day for ten or fifteen years is leading an artificial existence. The young animal of any other species is allowed to frisk and play in the open fields and compelled to make considerable effort to secure food. Under these conditions he thrives; but if he is confined to a stall in some shed or stable, his coat lacks that luster which betokens health, his feet and limbs are deformed and his entire development is retarded.

During the years of school attendance, a child maintains a sitting position a considerable portion of each day and this position is not favorable for good peristaltic action of stomach and bowels. His trunk has been bent forward and the apices of his lungs have not been developed. His trunk has been twisted in writing, drawing or other work with pen or pencil, while one shoulder has been too high or too low. He has been breathing contaminated air and catching infectious diseases, each of which leaves its impress upon him. The lack of

activity renders his circulation stagnant, while his muscles fail to develop through want of work, and even the bones lack density because the muscles attached to them do not exert sufficient strain upon them to compel them to become dense and strong.

Education should be a training for better living, and it fails in its aim if it impairs the recipient's health, for without health, happiness and contentment are out of the question. Ill-health distracts the attention, prevents concentrated mental effort, reduces the working capacity, produces irritation and causes failure.

The common impairments of health that can be traced to school life are as follows:

1. Lateral curvature of the spine.
2. Digestive disturbances. Sedentary habits affect the circulation to the abdominal viscera, and the result is constipation, with reabsorption of fecal matter, biliousness, headache and general irritability.
3. Lung diseases. A stooping position develops a constriction in the region of the ninth rib. The apices of the lungs fall into disuse and become breeding places for germs of disease. Consumption begins to manifest itself as early as the 8th grade.
4. General infectious diseases. There is a steady increase in the number of cases of measles, scarlet fever, diphtheria, etc., from the time school assembles until the following spring when the windows can be thrown open.
5. Congestion of the brain. It is the raising of the chest walls that reduces the thoracic pressure and allows the return of venous blood to the heart. During mental exertion an increased amount of blood is sent to the brain while the cramped position of the chest prevents its return. The result is headache.
6. Impairments of the organs of vision. A stooping position with the eye too close to the paper produces changes in the eyeball. The first symptom is headache.
7. Women's diseases. Constipation, lack of strength in the muscles of the abdomen and interference with the circulation to the generative organs at the age of puberty result in a train of afflictions known as diseases of women.

The remedies are: (1) Proper adjustment of seats and desks. (2) Such a rotation of subjects should be adopted as will prevent strain of eyes and will afford mental rest. (3) Frequent periods of exercise should be used to afford relaxation, to stimulate the circulation, to develop the muscles and to preserve the mobility of the spine.

A complete treatise on grade exercise may be obtained and intelligent effort on the part of teacher will make the work successful. The Manual of Physical Training prepared by Dr. Carl Ziegler of Cincinnati is

the best I know of. It can be obtained from the Freidenker Publishing Company of Milwaukee for eighty-five cents.

Mr. McArthur's paper was discussed by Miss Grace Shepardson. She said in part:

"Mr. McArthur has covered the subject very well, and I heartily agree with and second all that he has said concerning the need of physical training in the public schools of the country. . . .

"The concentration of all educational agencies on the training of any one department of power is sure to produce an abnormal being, a physical, an intellectual, or a religious crank.

"Both the intellectual and the moral education are strongly dependent upon the physical development.

"The school life of the ordinary child is a direct hindrance to his best physical development. At an age when physical activity is most necessary for the normal development of all parts of the body, he is confined in a school room from five to six hours a day."

The next number on the program was an address by W. H. Orme of Ashland on "The Problems of the Intermediate Grades." Mr. Orme said in part:

"We are living in an age of specialization. It has long ago reached the school room. For several years we have laid special stress on the education and training of teachers for the kindergarten and primary grades. In the grammar grades the departmental plan has been adopted in many schools. We have special teachers in Music, Drawing, Penmanship and Gymnastics. We have specialized everywhere except in the grades of our intermediate department."

He then told what was being accomplished in primary grades as a result of specially trained teachers, of what should be and was not the result of the work of the intermediate grades, and suggested that the standard of the intermediate grades could be raised by requiring better training for teachers of these grades, and by adopting a more rational course of study.

He said: "Our pupils in these grades are carrying too many studies. A glance at the course of study for the intermediate grades will show that pupils are carrying all the way from eight to ten separate studies. His energies are being turned in just so many different and unrelated directions instead of being concentrated on a few. There ought to be more correlation in the branches taught.

"Let the completion of any part of our school course mean something definitely accomplished. If our education is a building up process, we must have a system equally strong in all its departments. We cannot pay special attention to both ends of the grammar school course and leave the middle course to take care of itself."

In the absence of Supt. M. N. McIver there was no discussion of this paper.

"What Things Are Essential and What Should Be Optional in the Grades?" was the subject of a talk by Supt. P. J. Zimmers. In substance he said:

"I believe in a moderately enriched course of study with the omission of unessential details, and my contention is that there is ample time for the administration of a moderately enriched course of study, embracing the three R's, Spelling, Geography, History, Physiology, Music, Drawing, and Manual Training. Twenty years ago, the common school curriculum was meager. Today, in addition to the branches taught at that time, we have the manual arts—including either Manual Training, Domestic Science, Domestic Art, or all three. We have Nature Study, Literature and physical exercises. Clearly, the number of studies has been greatly increased. Moreover, there are more topics under the different studies than twenty years ago and under the various topics the amount of detail has grown. I believe it is patent to nearly all who are engaged in school work that the common school curriculum is overcrowded. The question is how to find time for all these studies.

"Several means can be employed to solve this problem of rationalizing the course of study and finding time for its administration. First, the trained teacher must be able to make a proper selection of topics for study. Not one of the branches can be wholly omitted and the problem is how to teach the branches so that the pupil will get what he ought to have.

"Second improved methods of teaching. Methods have improved in a wonderful way but there is still room for progress.

"Third, details that are unimportant and unessential must be cut out. No one can do this but the trained teacher. Efficient and well trained teachers should have some measure of freedom in the choice and arrangement of topics.

"Fourth, a different conception of thoroness is a great factor in rationalizing the course of study. Thoroness in spelling means the mastery of every word; thoroness in primary arithmetic means a knowledge of every combination of numbers within a certain limit; thoroness in the multiplication table means that the pupil master the multiplication table from beginning to end; thoroness in reading means that the pupil know each word. Now, it is natural for teachers to apply this conception of thoroness to other branches, such as Nature Study, Geography, History. If this is done, the task is hopeless; for these branches contain innumerable facts—some important—some unimportant—and thoroness in these branches means

a wise selection of topics—a judicious choosing of the essential facts with a willingness to omit the rest.

“In the treatment of most topics, thoroughness means the choosing of the main fundamental thoughts—and the detail necessary to support those thoughts with the omission of unnecessary and irrelevant detail.

“I believe the main solution of rationalizing the course of study and finding time for its administration lies in the right interpretation of thoroughness and in giving freedom to the well trained and efficient teacher.”

An informal discussion of Superintendent Zimmer's talk took place, after which the meeting was adjourned.

ELIZABETH R. McCORMICK,
Secretary.

STATE GRADED SCHOOL.

Officers: Chairman—George H. Drewry, State School Inspector, Madison.

Secretary—Carrie J. Smith, Fort Atkinson.

Treasurer—Alexander Corstvet, Principal District 16, Wauwatosa and Greenfield.

The meeting was called to order by Chairman George Drewry, and the following program carried out:

“Drawing,” a paper by Miss Ervie Thompson, Cudahy, was the opening number of the program. Miss Thompson introduced her paper with a quotation from Wordsworth, “So build we up the being that we see.” She said in part:

“I believe that Drawing is of great educative value as it leads to higher ideals and creates within the child a love for the beautiful; in it the hand and the intelligence combine to produce results. . . . A man who has never tried to execute with his pencil leaf, flower and stream cannot compass the divine ideas of beauty and harmony. . . . In drawing there are three steps: (1) the idea, (2) how to express it, (3) the drill.”

In closing, Miss Thompson dwelt upon the fact that good results came from careful training and practice, and Drawing, like all else, must be given its share of attention.

At the conclusion of the paper the question of how much time should be given to Drawing was raised. Principal Kerry of Cudahy stated that one hour per week for four months had been given in seventh and eighth grades and that good results had been secured. Some of the work from this school was exhibited at the meeting.

Following the discussion, Principal A. E. Schaub, West Allis, addressed the teachers on "Observation Work in the Primary and Middle Forms." Some of the points brought out by Mr. Schaub were: the need for more opportunities for children to continue the habits of observation which they develop so quickly before entering school; a change from the repressing system now in vogue of devoting all the time of primary classes to acquiring mechanical processes which are only means to an end at best; the necessity for teachers to be observers and investigators themselves. Further, our teaching should be to develop "eye-power," "ear-power" and "thought-power," but the reverse is the rule. Text-books contain much good material for training but only teachers who can deal with live surroundings as well as mechanical facts can train the thinker and observer. "Teachers must leave the text-book and go into the fields to study nature and then they must teach nature and not try to correlate with too many other things. We have manuals with fine instructions and helps but they are not followed. Why not?"

"School observation work has been pronounced unsatisfactory in the past. Then it should be given more prominence in our county meetings, institutes, etc. Perhaps our county superintendents or our inspectors could give us a syllabus which would be a guide, definite and comprehensive, and better results would be gained. We should have good strong observation work with its attendant benefits."

In her discussion of Mr. Schaub's paper, Mrs. G. B. Rhoads, while agreeing as to the value of observation work in training the mind, expressed the hope that there was not so great cause for alarm as his arguments seemed to imply. "Present social conditions do not tend toward allowing the mother much time for training the child and the school is a new environment which he must study. He gains new power and that by observation along the lines of obedience, self-control, kindness, respect for the rights of others, all elements of character building the ultimate ends of education. Even in these so-called "mechanical" tasks the child must observe, while the well-decorated room, the neat and dainty teacher and wise and sympathetic guidance often supply far greater incentives than the home environment. Most teachers are conscientious and over-supervision accompanied by over-direction are liable to produce stiff and stilted work."

A short discussion on the point suggested by Mr. Schaub in regard to county superintendents and inspectors closed this phase of the program.

Superintendent J. A. Haselwood, in discussing "Nature Study or the Elements of Agriculture in the Rural Schools," advocated the dedication of ten minutes in the daily time to this branch, "which is not a

fad; it has stood the test of time. It is a means of awakening interest in their surroundings and opening for the country boy or girl a sympathetic interest in his every day life. It is a mistake to emphasize city conditions to the country boy and leave him to find out for himself the vast interests of his daily life. Teachers must know their ground; use the text-book, but not be its slave. The object of this teaching is not to make farmers of the pupils but to teach them to be farmers, to appreciate the beauties of their surroundings, to grasp the underlying principles and to realize their application and practical values." An outline suggestive as to subject matter, but without particular relation as to order, is here appended:

1. Soil.

Formation, kinds, tillage, fertilization, drainage.

Essentials of good soil.

Proper texture, plant-foods, temperature and moisture content.

Functions soil performs in growing plants and trees.

2. Products of the soil, plants.

Trees and uncultivated plants. How and where they grow.

Cultivated plants.

Preparation of the soil, selection and testing of seed.

Sowing and planting seeds, cultivation of crops.

Enemies of plants, prevention, destruction.

Harvest time, gathering of crops and fruits of field.

Threshing, husking, etc., of crops.

3. Animals, wild and domestic. Habitat of same.

Protection and value of useful wild animals. Game laws.

Destruction of animals and birds that do great harm.

Domestic animals. Importance of breeding.

Feeding and care of animals. Enemies of animals.

Sale of animals and animal products.

4. Topics worthy of special consideration:

Observe birds, kinds, nests, food, general habitat, etc.

Woods, hills, brooks, rivers, springs, glens, valleys.

Fruits, berries, nuts, flowers, etc.

5. School and home gardening.

Purpose of gardening—school, home, landscape.

Vegetable and flower gardening.

Study of seeds, bulbs, tubers, shrubs, vines, etc.

Trees and tree planting. Forestry.

Importance of beautifying home and school surroundings.

6. Manual training, domestic economy, farm bookkeeping.

Simple work in constructing things for the farm.

Drawing plans, making models, keeping accounts.

- Consider cooking, baking, sewing, house-keeping, nursing.
 Teach agricultural arithmetic.
 Language and composition work should be based on experiences connected with farm life.
7. Give attention to legislation affecting agricultural interests.
 National laws, state provisions, county board's powers, town and village boards, authorities.
 Value of good roads; how to construct same.
 Why farmers should be interested in affairs generally.
8. Importance to farmers of good schools, churches, society, manufacturing and government. Citizenship and farming.

A discussion by Principal Johns, Marathon County Agricultural School, followed. Mr. Johns made a plea that teachers should make children enjoy country life. He also stated that the farmer could be interested in the work of scientific agriculture through making him see that he could make two dollars where he has made one. He argued for two lines of work,—nature study, which is scientific, and elements of agriculture, and that this work can be taken up in any grade. He illustrated the nature work concretely in insects.

After a word from Mr. Rice recommending the teachers to send to Superintendent Kern of Rockford, Ill., for bulletins of his work, the meeting adjourned.

CARRIE J. SMITH,
 Secretary.

REPORT OF PROCEEDINGS OF COUNTY SUPERINTENDENTS' ASSOCIATION.

Officers: A. J. Ingli, Ellsworth, President.
 E. R. Patterson, Darlington, Vice-President.
 Lura A. Burce, Eau Claire, Secretary.

Address by L. W. Wood, Rural School Inspector, on "The Greatest Need of the Rural School."

THE GREATEST NEED OF THE RURAL SCHOOL.

It is very generally conceded that during the last twenty-five years the city schools of our state have made rapid progress. To-day we have a goodly number of high schools whose buildings, courses of study, equipment and teaching force are fully equal, if not superior to

those of many of the colleges and state normal schools of twenty-five years ago. It is also conceded that in general progress and efficiency of work, our rural schools have not kept pace with the city schools. It has even been charged in the public press and from the public platform that the rural schools of today are inferior to those of twenty-five years ago. I was a student in one of the best of those old time country schools and later taught a number of terms in country schools; As a high school principal I have for the past twenty years been dealing each year with boys and girls who came to the high schools from the rural schools. This experience, with what I have observed of the work of these schools during the past few months in several different counties of the state, makes me feel that those who make the charge that they are no better than they were twenty-five or thirty years ago, are decidedly wrong.

As before stated, however, it is generally conceded that the rural schools have not kept pace with the city schools. This being the case, the causes that have made the rural schools lag behind those of the city become matters of much importance in the consideration of the rural school problem. One reason frequently urged in this connection, is that while the state has done very much for the city schools it has done nothing for the rural schools, and the conclusion usually drawn is that if these schools are to be made substantially better the state must come to the rescue. I believe the reason assigned is entirely unwarranted by the facts, is an injustice to the state, to the urban communities and that the urging of it results in undue prejudice on the part of rural communities that works detrimentally to the interests of the country schools. The only financial aid that the state has given the city schools that it has not given the rural schools is the special state aid to high schools. This special aid given to the cities maintaining free high schools is a mere bagatelle in comparison to the local tax levied by the people of our cities for the education of their children. It is a well known fact that the public schools of the following cities are among the very best in the state, and it is also a fact that none of these schools receive anything from the high school fund. They are as follows: Kilbourn, La Crosse, Madison, *Manitowoc, North Side, Manitowoc, West Side*, Memononie, Milwaukee, Oshkosh, Racine and Superior.

No one acquainted with the facts will deny that the cities just mentioned maintain schools that rank among the very best in the state. The schools in these cities have made as rapid progress as those of the other cities of the state, and they have made this progress without special state aid. This being the case, it would be absurd to sup-

pose that the small amount of special state aid received by a majority of our cities has enabled them to outstrip the rural schools. If we would find the true cause, we must search farther, and in this connection I desire to submit a few facts for your consideration.

The assessed valuation of a certain city is \$1,111,968. The assessed value of a town in the immediate vicinity of this city is \$999,635, or in other words, the valuation of the town is approximately ninety per cent of the valuation of the city. During the current school year the people of the city will raise a local school tax, exclusive of the seven-tenths of a mill tax and the county school tax, amounting to the sum of seven thousand six hundred fifty-six dollars. If the six school districts included in the town were to raise a tax correspondingly large, it would amount to \$6,890. Instead of raising this amount they will raise the modest sum of \$950, and this amount includes \$125 that the town will pay to neighboring high schools for tuition. That is, the town will raise only about one-sixth as much in proportion to valuation as the city raises. On the basis of school population the town should raise about four thousand dollars, but it will raise less than one-fourth of that amount. The conditions to which I have called your attention are not exceptional. They can be duplicated in practically every county in the state. Statistics in my possession show conclusively that in proportion to valuation the average country school district levies less than one-half as much local tax as the average city levies for the support of the grades below the high school.

Reports from county superintendents in different portions of the state indicate that there were probably from five to seven hundred districts in the state that levied no local tax whatever at the last annual meeting.

One county superintendent reports that thirty-three districts in his county had on hand at the last annual meeting an amount greater than they had expended during the preceding year for all school purposes. There are in his county about one hundred thirty rural school districts. Thus, about twenty-five per cent of the districts in this county had on hand at the last annual meeting more money than they had expended for all school purposes during the preceding year.

Another superintendent reports as follows:

Whole number of districts.....	90
Number that raised no local tax	13
Number that raised only fifty dollars	6
Number that raised less than fifty dollars	12

Total 31

Thus it will be seen that about one-third of the school districts in this county raised either no tax at all or else raised a sum not to exceed fifty dollars. Still another superintendent reports that of one hundred and two schools in his county twenty-four raised no local school tax at the last annual meeting.

Many of the rural schools of our state have for some years maintained their schools entirely by the money received from the county school tax and the seven-tenths of a mill tax. In many cases they have done this by holding only seven or eight months of school and by pursuing the policy of letting to the lowest bidder the job of teaching the school and by neglecting to keep their buildings in repair and furnish their teachers with the necessary working tools of a school. What do these facts mean? They mean that the educational ideals of our rural school communities have not kept pace with the ideals of the people of our cities.

The sort of a school that any community maintains depends more upon the educational ideals that prevail in that community than upon all other forces combined. If the educational ideals of a community be raised to a higher plane, the result is soon manifested in better school buildings, better sanitary conditions, better equipment, better teachers and better relations between the people and the teachers. If the educational ideals of a community fall to a lower plane, the result is soon manifested in dilapidated buildings, unsanitary conditions, scanty equipment and poor teachers. In other words, the result is a poor school.

A good friend of mine is a farmer. He tills the farm that his father tilled before him. He is also a member of the school board of his district. My friend is a successful farmer, and why? Simply because his ideals as regards agriculture are right, and as a result, he makes use of modern methods and modern equipment in the running of his farm.

So much for my friend as a farmer. How is it with him as a member of the school board? When urged to have the school building repaired, a new floor put in, the old seats that the carpenter made when he built the school house years ago replaced by good, patent single desks, or when urged to furnish better equipment for the school, he replies, "We can't afford it." "What we have now is as good as what we had when I was a boy, and what was good enough for the boys and girls of the district then is good enough for the boys and girls of the district now." When it comes to the hiring of a teacher for the district, my friend is always inclined to let the job to the lowest bidder. In other words, as a school board member, he is an unqualified failure because his ideals in regard to educational matters are not

right and his actions are simply in line with his ideals. In his own business he is quick to avail himself of improved methods and equipment, but in school matters he is a quarter of a century behind his time. If his were an isolated case, it would not be worth mentioning, but unfortunately it is not. There are hundreds of men in the state, both on and off school boards, whose attitude toward the rural school in their community is the same as his.

Some time ago, in company with a county superintendent, I inspected two rural school buildings. One of these was a neat, modern structure. It was well lighted, and special provision had been made for ventilation. It was seated with modern, single seats. It was provided with slate black-boards, good recitation seats, a good desk and chair for the teacher. There was a well equipped library, well housed in a good book case. In fact, practically all of the necessary working tools of a school were there. The county superintendent informed me that only the best teachers were employed in that school. As I left the door of this building, I said to myself, "Here is a little red school house of which any community might justly feel proud, for it is a credit to the district, the county, and to the state." Four or five miles farther on we inspected another rural school building that was a disgrace to the district, the county and the state. It was an old, dilapidated building, the outhouses were unmentionable, and the entire premises looked as if the people had not expended a dollar for repairs in the last five years. The children were required to sit in dirty double seats. Not more than half of the essential working tools of a school were there. In looking about the room, I found an American flag, and as I looked upon it, I thought to myself that it would be a disgrace to the flag to hoist it within a mile of this proposition. Why the striking contrast between these two schools? Both were located in the most prosperous portion of a rich and prosperous county. Both of these schools were under the jurisdiction of the same state superintendent and the same county superintendent. Both of these districts were entitled to the same rights and benefits resulting from wise educational laws. Yet the contrast between these two buildings was as marked as the contrast between daylight and darkness. The primary cause of this striking difference was the difference in the educational ideals which dominated the two communities in which these schools were located. In one district high ideals prevailed. The question asked at the annual meeting in this district is how much money is it necessary for us to raise in order that we may have a good school? In order that we may have a school that will be a credit to the district and to the state? In the other district the question asked at the annual meeting is, What is the least amount that we can raise and es-

cape losing our state money? The spirit that dominates the one district is that of progress; the spirit that has moved the world along from a hand sickle to a self-binder, from a plow made of a forked stick, to one made of the finest steel. The future welfare of our rural schools depends upon which of these ideals shall prevail. Today the need of the rural schools of Wisconsin that over-shadows and outweighs all others, is the need of higher ideals among the people of the communities in which these schools are located. This brings us to the important question of what forces we can avail ourselves of to raise the educational ideals of our rural school communities to a higher plane.

These forces must to a great extent, be organized and put into operation by the county superintendents, aided in all possible ways by the state department of education.

I have recently visited seven of the ten county training schools now in operation. I find that a large majority of the young men and young women who are enrolled in these schools are from the country, and if my judgment of the work being done in these schools is correct, it is of such a character as to develop in these young people an educational spirit that will not end with a service of three or four years as teachers in the rural schools. A large majority of the graduates whose homes are in the country will, after their service as teachers is ended, take up their permanent abode in the country and will, I believe, become active and influential advocates of better rural schools in the communities in which they live.

A few weeks ago there was issued from the state department of education a circular letter addressed to all persons who contemplate doing institute work in the state next year, urging upon them the necessity of making themselves more familiar with the needs of the rural schools by actual visitation of these schools. I believe that those who respond to this call will be brought into closer touch and sympathy with the rural school problem than they have ever been before, and that as one result many of them will gladly respond to the call of superintendents for aid in the conduct of public meetings in the rural school communities.

Last, but by no means least, our great agricultural college at Madison will, I believe, become a powerful agency in carrying on the work under consideration. Last year there were one hundred and twenty-four students graduated from this department and in the years to come the number will be even greater. I believe that the work done in the agricultural college will lift the educational ideals of these persons to a higher plane and that they, like the graduates of our county training schools, will stand for better things in the schools of their respective districts.

I hope and believe that in the near future every farmer's institute will be a place where not only better methods of farming are taught, but where the gospel of better rural schools shall be preached, not only by persons connected with the state department of education, but by the conductors of these institutes themselves.

With all of these forces thoroughly organized and working harmoniously and vigorously, may we not hope that as the years go by the educational ideals of the people may be raised to a point where they will feel so keenly the need of better schools that they will gladly pay more in order that their children may receive more.

Mr. Wood's address was followed by a discussion in which Superintendent Fox advised that the ventilation system advocated by Mr. Wood before the school board conventions be published by the state department.

Supt. John Kelley very ably presented the topic, "The School Board Convention," reviewing a talk given by Mr. Wood before the Dodge county convention on "The Working Tools of a Rural School," also one given by Professor Elliot entitled, "Dollar for Dollar." He spoke of both as being strong addresses and said both had done much to arouse educational sentiment in his county. Mr. Kelley stated that there were but two teachers in Dodge county with normal training and cited the value of the convention in creating a sentiment for better teachers and better wages. In the report of his convention he illustrated the interest shown by a statement that fifty of the members walked three miles from a junction to be there on time and the results were very encouraging. Mr. Kelley left two thoughts for those who had not yet had the school board meeting. First. Ask members of the school boards to take part, and allow as much time as possible for questions and discussion. Second. Follow the meeting with a circular stating the desires of the superintendent in regard to improvement. In the discussion that followed it seemed the unanimous opinion that a few topics thoroughly discussed were better than many on such a program.

Supt. G. F. Snyder took up "The Farmer and His Schools." He discussed the history of farming, dwelling upon the advancement of ideas and the investigations along scientific lines that have been worth millions to the farmer. He said, "It becomes apparent that the farmer has risen into prominence, as have people of other occupations and professions, because trained and educated minds have applied themselves to the farm problems and to a certain extent solved them. The improved conditions indicate that people are beginning to realize

that agriculture is a great science and the field for study and research and experiment is broad."

He quoted opinions from Congressman Adams, Supt. C. P. Cary and ex-Governor Hoard on the value of Agriculture as a study in the rural schools and defined a good common school education as "one in which children are taught to read, write, spell and speak correctly and well; where a practical knowledge of Arithmetic and Language is gained, and one the graduates of which are familiar with the important facts of History, Geography, Constitutions, Physiology, Agriculture and good morals and manners." Mr. Snyder expressed the need for better trained teachers and believed that the first step is to create public sentiment favorable to better schools thru school board conventions, public meetings, educational excursions, etc. He closed by saying, "We look forward to the time when the farmer on his broad rich acres will not long make lawyers, doctors, etc., of his children, but place them in the cleanest place morally, and the freest place mentally and physically,—the farm."

The subject of "School Buildings and School Grounds" was presented by Superintendent Overton who gave as his opinion that heretofore too much had been expected of the teacher in this direction. He believed that much could be accomplished through the school board convention and that the school boards should be held responsible for conditions. He stated that it must take years to make wide improvement and advised putting forth every effort to secure one model building in a locality for an example, and stated that this would do more to create public sentiment than anything else.

He outlined a scheme for yard improvement and recommended a light fence to protect trees and shrubs. Box elders were suggested as good shade trees and natural conditions should be recognized in planting and choosing, as far as possible. The out-buildings should be clean, wholesome and neatly painted inside and out. Where possible the doors should be turned from the school building, but if not possible, a screen of planed boards should be erected and have it painted. He suggested putting sand in the fresh paint about the buildings to prevent marking and cutting.

A representative of the Wisconsin School Supply Co. here presented the subject of Superintendents' Library Records, and asked for a conference in regard to the same, that a satisfactory one might be made by his company. A committee of three was appointed to consider the matter and report to the convention.

The president's address was omitted on account of time, but in a few well chosen remarks Mr. Ingli emphasized the necessity for superintendents standing together on legislative matters. He believed a

mistake had been made by cutting down the sessions to one-half day instead of two and recommended holding two at least, the year the legislature is in session. In closing he severed his connection with the superintendency with touching remarks.

Mr. Ingh's retirement was keenly felt by all, for he has been a valuable member and co-worker of the Association, and as member of the Legislative committee has done much for the interests of the county superintendency.

OFFICERS ELECTED.

G. F. Snyder, Baraboo, President.

John Kelley, Juneau, Vice-President.

Julia Rockafellow, Waukesha, Secretary.

LURA A. BURCE,
Secretary.

COUNTY SUPERINTENDENTS AND COUNTY TRAINING
TEACHERS.

Officers: Chairman—M. H. Jackson, Principal Wood County Training School, Grand Rapids.

Secretary—Elizabeth Allen, Assistant Dunn County Training School for Teachers, Menomonie.

Treasurer—J. A. Eichinger, County Superintendent of Schools, Door County.

The meeting of the county superintendents and county training school teachers was called to order by M. H. Jackson, chairman. Miss Allen, having been prevented by illness from attending the session, Julia R. Rockafellow was appointed acting secretary.

Principal O. E. Wells, Wausau, opened the session with an address of "Greeting to New Members." In his preliminary remarks Mr. Wells explained that in his invitation to welcome the new members had been a hint that he should "jolly" them and make them feel at home, but considering the subject of such great importance he deemed it his duty to inform them first as to what they were welcomed to. He then enumerated different benefits accruing to the members, such as: an opportunity to furnish to speakers on the general programs and other seekers after statistics catalogues of the schools; a participation in a noble enterprise, the betterment of the country school; the task of a missionary in evangelizing the less progressive communities and con-

verting them to the gospel of better schools. The closing caution of this welcome was not to let these schools grow away from their constituency, not to emulate the normal system, but to keep in view the end of educating the community for which they were designed.

Mr. Lusk of St. Croix Falls, in a short answer to the welcome on behalf of the new members, assured the Association that they would do their part.

W. E. Smith, Waupaca county, in treating his subject, "Agriculture in Country Schools," brought out the fact that the Legislature in enacting a law making the teaching of Agriculture obligatory in the district school, filled a long felt want. He claimed that the purely intellectual teaching weaned the boy from the farm instead of making him a better farmer, and that the text-books in use, dry as to fact and antiquated as to illustration, were of little value unless supplemented by live teaching. The teaching of Agriculture forms an avenue of escape from these evils. Mr. Smith called attention to a series of experiments by which to develop the principles underlying moisture in the soil, plant food, and growth, ideal soil, rotation of crops, fertilization, propagation, transplanting, seed growth, weeds, gardening, etc., all with a view of awakening in the student the instinct of investigation.

Supt. J. A. Haselwood, Jefferson, in his discussion, emphasized the value of getting away from the text-book and studying the subject in home and school gardens by means of experiment. He cautioned against the teaching of too many facts and in too much detail.

"Equipment of the Training School" was the subject of a paper given by L. W. Wood, Madison. Mr. Wood claimed that the business of the training schools, the training of teachers for country schools, required the training of the student to use successfully and skillfully the essential tools to be placed at his command as teacher. A little library of well selected books is found in practically every district school, but not all the teachers know how to use these to the best advantage, and the boys and girls are not gaining all they could from them. Every school should have a number of copies of Webster's Academic Dictionary to assist the pupils in enlarging their vocabularies. Work in illustrative experiments is necessary to teach the fundamental principles underlying branches such as Physical Geography, Physiology and Agriculture, and every school should be supplied with a small amount of well selected apparatus. In addition to a good compound microscope, equipped with double revolving nose-piece, an iris diaphragm, two eye-pieces (one and two inches, respectively), and two objectives 12-3 and 11-6, supplemented with slides showing plant and animal cell-structure, will introduce a new world of thought.

During the general discussion following Mr. Wood's paper, Mr. Liebenberg of Alma brought out the necessity for securing the co-operation of the farmer if the school is to be a success. In reply to a question from Mr. Thompson, Richland Center, as to apparatus necessary for teaching Physical Geography in training schools, Mr. Stanley, Wau-paca, said that the most expensive piece was an air-pump, the rest not aggregating more than seventy dollars. Another point was made that the apparatus used in the training school should be suggestive and adaptable to the schools which the students would be called on to teach.

Supt. A. L. Bowman, Menomonie, sees in the training schools the ideal conditions for the development of the ethical values in stand-ards. Each pupil must be lead to feel that he is the active factor of the whole result; that he will manage the school, the faculty, build-ings, exercises and all work of the school, and the standard by which he will be judged will be his ability to see, use and adapt the oppor-tunities and materials at his command. By standards we do not mean standings. The ethical value of the standard is the appeal to the pup-il's will to control his conduct and to guide his inclination and study. The standing is based upon the standard and where the standard is unknown the comparison of different institutions may work much evil.

"I believe the laying of these standards on the broad foundation of common sense in such a way as to be definitely understood by the lay mind, the acquainting of the pupil, the school boards, and the general public with them to the end that standings may be interpreted, we shall do several things that will be highly satisfactory to all concerned. We shall place within the pupil a stimulating force that will eradicate thru self-culture the harmful things in the sub-forty region. We shall establish an appreciation in the minds of our pupils of the ways and means that are lying about him highly valuable for self-develop-ment and by so doing render him self-educative in the highest degree. We shall place in the hands of those who employ teachers the means to learn through the standings much more definitely the relative merits of our product. We shall be able to explain more definitely to friends who are interested why the person in whom they are so much interested stands as he does. We shall give a standard so simple that most any one can do the measuring when the facts are known. And this leads to the next important factor closely connected with the standard, that is the determination of the facts leading to the stand-ing of the individual pupil to be marked. To get the necessary facts for standings it will be necessary to cultivate closest professional ac-quaintance with your pupils. A uniform minimum standing in all branches is best.

"I somehow think that under standards that all can understand on account of their non-technical statements, with faculty and students co-operating under the influence of a spiritual unity with the dominant desire to bring to highest strength all the teaching powers of the pupil through the frankest and most open methods of dealing with each other and with all the means for gaining that information that must go into the estimate of final standings used in the best way for each, I say, I think we shall have, with the help of the varying minimum scheme, the nearest to an ideal school that the ethics of a standard in final tests can give."

Upon the conclusion of Mr. Bowman's paper the meeting adjourned.

JULIA R. ROCKAFELLOW,

Acting Secretary.

REPORT OF PROCEEDINGS OF MUSIC SECTION.

Officers: Chairman—Edith I. Harney, Supervisor of Music, Milwaukee County.

Secretary and Treasurer—Herman E. Owen, Director of Public School Music, University of Wisconsin.

"A MUSIC LECTURE"—LESSON AND DEMONSTRATION.

Wm. L. Tomlins, President, Tomlin's School of Music, Chicago.

The first number on the program of the Music Section was a lecture by Prof. Wm. L. Tomlins, president of the 'Tomlins' School of Music, Chicago. The lecture was illustrated by a class of children from the Milwaukee schools. Mr. Tomlins urged the importance of vitality of tone rather than beauty. He said that if a tone is full of life and vitality it will be beautiful without being "goody-goody." "We attempt too much to prepare for performance and often lose sight of the real purpose of music in the schools."

Many helpful hints were given along the line of obtaining a correct quality of tone and this was emphasized still further in the lesson. Turning to the children with that characteristic air of good-fellowship for which Mr. Tomlins is noted, he said, "Boys and girls, we will play together." Judging from the animated faces which were turned toward the speaker it was evident that all the children were instantly in full sympathy with the big-hearted man before them, whose every feature expressed good-will and comradeship. If every supervisor could present such a personality before the class as Mr. Tomlins has the good

fortune to possess, many of the problems which now confront the supervisor would be solved. Continuing he said: "I can bid you welcome by the very quality of the voice without using any spoken words." This was illustrated by a rich, full tone which, together with a beaming smile, left no doubt as to the sincere expression of friendship and good-will. "The quality of voice sometimes contradicts the words." This was shown by giving words of welcome in an insincere and forbidding tone of voice. "The first thing I want you to do, boys and girls, is to be sure that the voice is continuous." Mr. Tomlins illustrated the point by passing his hand over a stick, at first in a steady motion and then by jerks. He emphasized it further by singing a clear, musical tone, the result of a continuous flow of the breath, then sang in a harsh, uneven tone by letting the breath out in puffs.

Mr. Tomlins showed what he meant by the resonance of a tone. He recommended the use of the syllable "zh" to get the proper effect, but said it must not be overdone. The children were told to play that they were all bees and to imitate the buzzing noise of the bees. They were also directed to give a sweeping motion of the hand in a circle while they sang and to try to think of the tone in the same way. "A swirl," said Mr. Tomlins, "means life and vitality." After continuing this exercise a short time the motion of the hand was discontinued, but the full, free quality of tone thus developed was retained. "There must be strength (not necessarily loudness) in the voice, yet it should be sweet as well as strong."

The syllables of the scale were written on the board and a rapid drill given. Two pointers were used a part of the time and the pleasing and musical effect of the two-part exercise thus given proved clearly that even a scale drill need not be uninteresting if conducted in the right manner. At the close of the lesson copies of the song "The Bare-foot Boy" were distributed and the children and audience joined in a short study of it. The happy and spontaneous way in which Mr. Tomlins presented the song showed the same admirable leadership which was evident in all his work. The lesson was a very interesting one and many valuable suggestions were given.

"PRACTICAL HINTS ON EAR TRAINING."

Mrs. Frances E. Clarke, Supervisor of Music, Milwaukee.

Discussion—Ida E. Van Stone, Supervisor of Music, Baraboo.

A paper on "Practical Hints on Ear Training" was read by Mrs. Frances E. Clark, supervisor of music, Milwaukee. She said that since

music is a language the child must first learn it by imitation, the same way that he learns the spoken language. The next step is the analysis and written expression of what he has already learned through the sense of hearing. This order of procedure requires a careful training of the ear in the earlier stages of music study. Mrs. Clarke gave a number of practical suggestions for training the child to distinguish between tones. She said it was a good plan to take advantage of the natural sounds which the child hears all about him and to encourage him to try to imitate them. This often brings good results with pupils who at first show scarcely any perception of pitch.

A short informal discussion followed the reading of the paper. The principal question which was raised was the advisability of trying to teach the child "absolute pitch." While a few of the teachers present seemed to think that this was not only possible but desirable, the majority did not favor it.

Instead of giving an oral discussion of the subject, Miss Van Stone read a paper which further emphasized the points brought out in the paper just read. In part she said, "The importance and value of ear training cannot be over-estimated; it rightly begins with the earliest development of the power to sing. * * * To have music intelligently enjoyed it is important to train appreciative and discriminating listeners. To this end definite hearing is necessary. * * * Ear training is preparatory to all lines of music. It should be directly along lines of other work in music." The paper closed with the following quotation from Mr. Cole, "The real language of music will be understood when music listening is comprehended."

"THE PSYCHOLOGIST'S VIEW OF THE AESTHETICS AND
THEORY OF MUSIC."

Walter F. Dearborn, University of Wisconsin.

Mr. Dearborn said that the psychologist approaches the subject of music from the standpoint of natural curiosity rather than from the side of aesthetics. He wishes to understand and analyze. Professor Stratton was quoted as saying that psychological work is explanatory rather than appreciative.

It was stated in the paper that "music arouses and sustains states of feeling that find expression in patriotism in the victories of warfare and of moral conflicts. Its marvelous uniformity and completeness have made it an argument for belief in God and immortality." The psychologist naturally asks, "Are these complex results due to simpler

and more elemental factors? * * * It is a favored theory of present-day psychology that emotions are simple reflexes of physiological conditions, and, if this is so, we might expect to find some such factors fundamental to musical susceptibility." It was pointed out that rhythm is undoubtedly one of these factors, as shown by the discovery of the connection between the periodic rise and fall of the attention wave and the rhythm of poetry and music. A prominent writer has said, "For a rhythm to be agreeable it must rise and fall at the rate at which this inner process of attention can easily go on. If a measure lasts too long it is felt as a strain upon the attention; if it is too rapid, it seems restless and we weary in trying to keep pace with it. Rhythm is without question a law of physical life as seen in the periodicity of nature and of animal life, as well as in the general activity all about us,—the rhythmic beating of the heart, the throb of the locomotive, the ticking of the clock, etc.

"The correlation of melody and harmony with physiological processes of sense and feeling has not been so well established as in the case of rhythm, but the dependence of these other elementary requisites of modern music on physical laws of mathematical relations points to such a similar connection." The speaker did not give much credence to the theory which is often held by musicians that music is directly expressive of thought and emotion. Experimenters have shown that ideas expressed by music are at least very indefinite. An example was given in which a musical critic "discovered on his first hearing of Richard Strauss' Don Quixote that he had confused the bleating of the lambs with the sighing of the windmills."

"Music has at any rate a truer function and sphere, which is peculiarly its own, quite apart from whatever may be its dubious interpretative possibilities in keeping the feelings and sensibilities attuned. It has a social value in kindling and renewing those common and universal feelings which are basal to higher moral qualities, some of which, as Lange has pointed out, 'are most useful to society, but which do not always find a field for exhibition in earnest.'"

"HIGH SCHOOL MUSIC,—WHAT IS IT TODAY?—WHAT SHALL ITS FUTURE BE?"

Lillian Watts, Director of Music, High School, Racine.

The last paper on the program was on the subject of "High School Music," by Miss Lillian Watts, director of music in the High School at Racine. It was an interesting paper and threw considerable light on

this perplexing problem. A letter of inquiry, sent out to leading supervisors in Wisconsin and surrounding states brought out the following facts:

All had music in some form in the high school and in most instances it is taught as a regular branch of study, pupils receiving credit which varies from a tenth to full credit for work done. The general plan is exclusively chorus drill taken by the entire school. A few of the more prominent schools, however, offer a definite course in theory, ear-training, harmony and musical history. This is open as an elective and may be chosen instead of some of the other courses. Regular credit is given. Musical organizations, glee clubs, orchestras and mandolin clubs are quite numerous, "many doing excellent work and contributing more in actual service toward all general exercises than any other department of the school." The attitude of the superintendent, principal, and members of the board of education toward the subject of music is usually very good. They appreciate its value in the school and show hearty support in furnishing material needed.

Although all the letters received indicated a marked improvement over former conditions and the supervisors seemed hopeful for the future, yet it was the feeling of all that the results are not what they should be. Miss Watts strikes the key note in the following statement, "*If we succeed I feel it must be by some other method than exclusive chorus work, conducted in one general division.*" Chorus work is important and has its place but is not sufficient within itself. Some schools, as shown above, have taken an important step forward in providing a definite course in music. It is to be hoped that many others may speedily follow their example.

The paper contained some valuable suggestions along the line of correlation. "If teachers of English and History would assign subjects that would acquaint pupils with the great masters in music, I would look for a decided change in their attitude during the music period. * * * Could not the work in English be covered as well by a character sketch of Beethoven as the sketch of a character from some work of fiction? If the teachers of music in the high schools would arrange a definite outline and present it to the teacher of English, a long stride in the right direction would be accomplished. * * * How else might we awaken interest? It seems to me by presenting the subject to the parents, giving them a better understanding of the subject as a branch in regular high school work. Those who grandly tell you of their lack of all artistic or tone perception, and so cannot expect their children to do much, do not realize in what a ridiculous light they are posing themselves. Because one is lacking or backward now, should he never begin to acquire? Do parents who

are weak in mathematics ask to have their children excused from Algebra? However, it is our duty as teachers of music to see that music really plays the part we claim for it. Mere mechanical drilling in the technics of the art, and even a more artistic but promiscuous cultivation of it has not brought the success to high school music we all desire." * * *

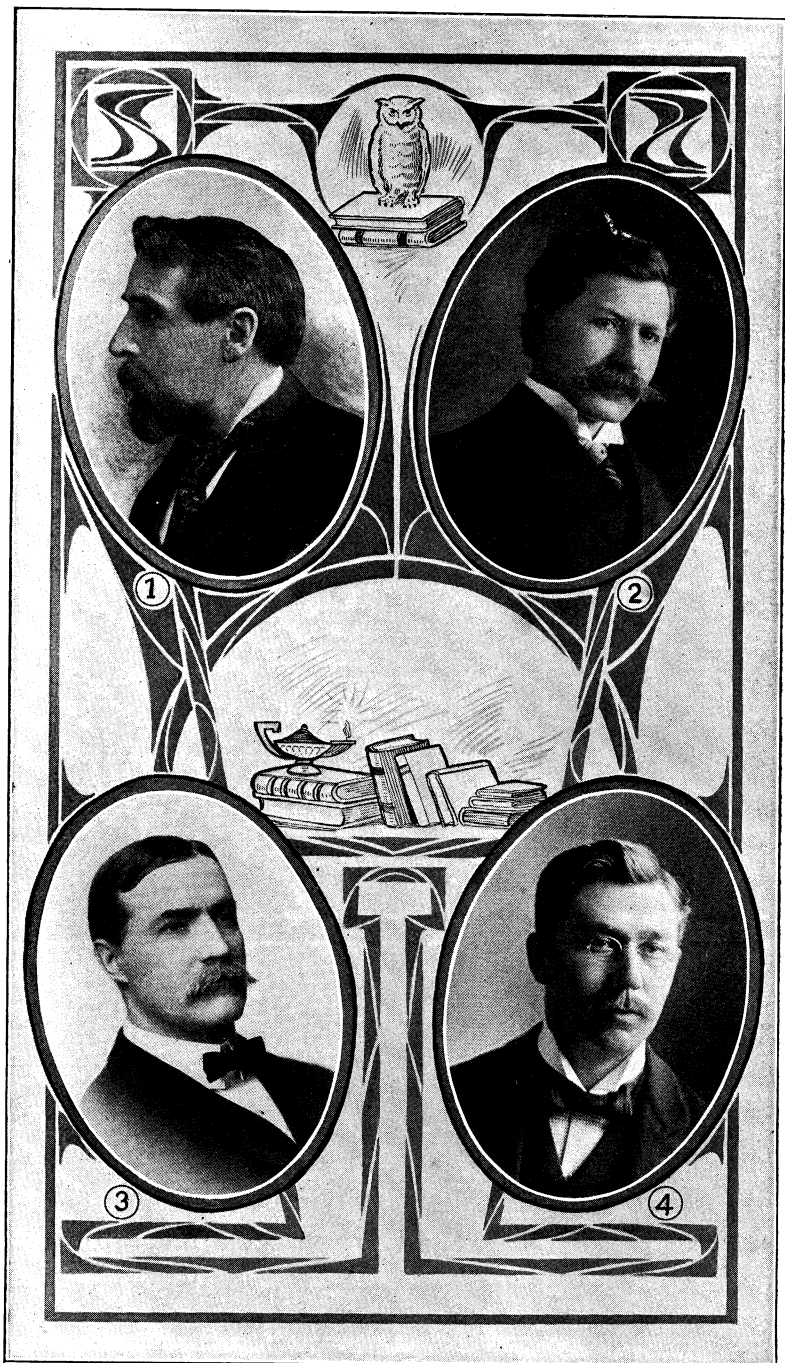
"Finally I would have music in some form, not necessarily using the voice when the conditions are unfavorable, compulsory. Albert Langnac in Musical Education, in referring to those who do not as children care to study music, says, 'One fine day they wake up with a violent desire to sing or play, and then if no one has known enough to force them to acquire some elementary ideas, in their early years, against their will, are very unhappy at not being able to satisfy their inclination. They make the most fruitless efforts to make up for lost time, with poor results or none at all, for they have no longer the necessary suppleness of mind. They deplore their laziness, but it is too late and thus one would have done them a kindness by exacting from them those few moments of daily practice, which would now suffice them as a basis. I am most certainly not one of those who wish that everybody should be a musician; on the contrary, this seems to me one of the faults of the age. What I should like, and this is not at all the same thing, is that all, even those who show no disposition for it, should receive enough material musical instruction to enable them at a later period to find a foundation prepared, that they may, in a measure at least, understand the most universally used of all the arts.'"

ENTERTAINMENT.

A part of the program of the Music Section which is always looked forward to with pleasure is the entertainment feature furnished by the members and friends. At this session the following persons favored the audience with groups of songs: Miss Barbara Ann Russell, supervisor of music, La Crosse, Mrs. Laura Rathbone of Chicago, and Miss Edith Serven, supervisor of music, Stevens Point. All the songs were well sung and much enjoyed. They were especially interesting to the large body of teachers and supervisors present, as they were in the main children's songs.

BUSINESS SESSION AND "ROUND TABLE."

At the business meeting a note of greeting was received from the Music Section of the Minnesota Teachers' Association in session at St. Paul. On motion the secretary was instructed to acknowledge the receipt of same and wire compliments of the season in return.



1. WM. L. TOMLINS.
3. C. G. PEARSE.

2. W. H. MIDDLESCHULTE.
4. G. H. LANDGRAF.

In order to encourage a more general introduction of music into the schools of the state and to assist the teachers as much as possible in the district schools and smaller towns where especial supervisors are not provided, a motion was made to have the chair appoint a committee to confer with State Superintendent Cary in regard to having music taught in the county institutes. The following committee was appointed: Mrs. Frances E. Clarke, Milwaukee, Miss Lucy A. Baker, Whitewater, and H. E. Owen, Madison.

An informal "Round Table" was held on Thursday afternoon to consider the subject, "Problems in Music Supervision and How to Meet Them." It was an interesting and profitable meeting for those in attendance. Some of the points brought out in the discussion were, the study of intervals, dwelling particularly with the treatment of the step and half-step, how to interest and help the unmusical pupil, and the value of individual singing. The subject of music instruction at the county institute also received considerable attention. It was urged that each supervisor give all the assistance possible in her own county. If this practice is followed thruout the state much good will result from it.

HERMAN E. OWEN,
Secretary.

SPECIAL EDUCATION.

Officers: Chairman—C. R. Showalter, Madison.
Secretary—W. F. Gray, Wisconsin School for the Deaf,
Delavan.
Treasurer—Caroline Harris, State Public School, Sparta.

December 29, 1905.

The Department of Special Education was called to order at about 2:30 P. M. by Chairman C. R. Showalter, ex-superintendent of the School for the Blind at Janesville. He remarked that he had delayed calling the meeting to order promptly at 2 o'clock in order that those interested might have time to assemble, and explained that he had been obliged to change the program as published in the official document, on account of his own inability to remain long in one place and of the presence of the quarantine on the School for the Blind, thus compelling him to supplant the first exercise on the official program with something else. He presented, however, two young men from that institution who rendered some very touching music on the piano and violin. This music was much to the entertainment of those present

and showed what could be done for some blind people along the line of music. After the music, which was heartily encored and responded thereto, the chairman read the program which he had revised to suit the condition.

The program was substantially as follows.

"What Are the Day Schools for the Deaf Doing?" by Supt. F. H. Jack of Sparta, and responded to by Superintendent Leverens of Sheboygan and Dr. Style of Sparta.

"Echoes of the Morganton Meeting," by Miss Edith Fitzgerald, of Delavan.

"Education of the Feeble Minded," by Dr. G. W. Wilmarth, of Chipewa Falls, and discussed impromptu by Pres. Albert Salisbury, of Whitewater.

"Nervous Diseases," by Dr. Mary D. Pogue, of Lake Geneva.

"Education of Incurables," by Supt. A. J. Hutton, of Waukesha.

The chairman expressed himself as being very much gratified at seeing so many faces long identified with the study of the weaknesses of the mind, and then called on Superintendent Jack, who proceeded to give a detailed account of how the Day Schools for the Deaf had grown into their present establishment. He said that approximately 85 per cent of those attending the day schools for the deaf were living at home; they mingled with their speaking and hearing fellows and were present at table talks over family affairs. They helped earn a livelihood for the family and were within reach of their parents, which it was the true purpose of the school system to bring about. He pointed out with much pride how some deaf had engaged in or been present at an entertainment about a church Christmas tree, and said that the day school was a great advantage to the community, as great pride was taken in assuming the responsibility of the duty of caring for this special department of their education. He drew the conclusion that these conditions would be conducive to making the deaf child a harmonious useful member of society. He quoted a member of the school board in a certain city as saying, "I would rather lose any part of our school system than our deaf schools." The best argument made for the existence of the day schools for the deaf was that they made it possible to bring more deaf children under instruction and at an earlier age than would otherwise be and that more than double the number were under instruction of some kind than before their inception.

Superintendent Leverens of Sheboygan then proceeded to discuss Superintendent Jack's paper. He made a few remarks about some proposed legislation last winter and proceeded to read his discussion

which seconded Superintendent Jack's ideas. Superintendent Leverens was obliged to leave a part of his discussion unread on account of a lack of time, and no general discussion of this topic took place.

Supt. E. W. Walker, of Delavan, arose to correct a misstatement relative to the day schools and said that instead of a bill being introduced to place the deaf schools all under the supervision of the superintendent at Delavan, the bill was to abolish the School for the Deaf at Delavan.

Miss Fitzgerald was then called to read her "Echoes from the Morganton Meeting." She stated that she had no difficulty in reading lips or talking intelligently in small circles but that the audience before her was too large to make herself heard satisfactorily. She therefore requested Superintendent Walker to read her paper for her. He explained that Miss Fitzgerald had become deaf after having obtained some vocabulary. She went to school where she was made to abjure anything suggesting the sign language and was taught that it was more or less criminal to use signs of any kind as a means of communication. She said she had no idea of the value of the sign language in off-hand conversation before going to the college for the deaf at Washington, D. C., and then she learned that for social intercourse between those similarly afflicted, there was no other medium which afforded so much pleasure, instruction and entertainment as the sign language; and that it widened the horizon of possibilities and brought the deaf nearer to each other and strengthened their bonds of sympathy. She said that at the Morganton convention last summer the pleasure and the profit was immeasurable. If she was compelled to follow the signs of the lips, for lip reading is nothing but small signs to the deaf, the circle of attention was too small and too narrow, but where two or more were conversing in the sign language the thought could be grasped as a pleasure and vast fields were covered in short order with no apparent effort.

Miss Fitzgerald's paper was followed by a well written paper on "The Education of the Feeble Minded." Dr. Wilmarth, superintendent of the Institution for Feeble Minded at Chippewa Falls, took the ground that only those who could be taught came under his discussion, for there was a sharp distinction between the idiot and the imbecile, and that he proposed to discuss only the improvable and relegate the idiot to the custody of a place made for their care with no regard to their improvement. All children at birth have groups of nerve cells on the surface of the upper brain, each group being designed to serve a special purpose, and if for any cause a group is wanting, that faculty never develops and it is possible that a corresponding group on the opposite side of the brain may be made to take up the function in part. It may

be that one of the systems thru which that is expressed, as speech may be lacking thru mechanical defect, but here the hand expresses that which the tongue cannot convey. Where actual mental weakness occurs it must be due to the cell groups themselves. We must look for the cause in the brain itself and not elsewhere. The feeble minded are taught by the teacher selecting the point or points of weakness and given individual care and are simply carried along by her personal effort. The child's attention must be secured by means best suggested by the case in hand and kept up with shifting scenes so as not to tire.

Physical exercises are essential, Sloyd and hand work are valuable. We cannot hope to so educate the imbecile so well that he may claim and maintain a place in society, but may be so far developed that he may assist in his own support and of his kind. The imbecile should not be allowed to run at large, as it were, and increase the burdens of society by the multiplication of his kind. Therefore they should be kept distinctly apart and under the fostering hand of the state.

President Salisbury of Whitewater, a pioneer in the education of the feeble minded in Wisconsin, made a few remarks concerning the subject. He stated that he was among the pioneers of the movement for the state to take care of those who troubled the teacher by being short in the course of ordinary mental development and that the agitation which he modestly claimed to have had a hand in, had borne fruit in the creation and maintenance of the school at Chippewa Falls, of which Dr. Wilmarth is superintendent, and which is now over full, with some three or four hundred on the waiting list to be admitted. That they may never hope to secure all and that the state had yet a task before it to perform.

The next number of the program was a paper on "Nervous Diseases," read by Dr. Mary D. Pogue of Lake Geneva sanitarium, for those afflicted with nervous diseases. She spoke of the value of the motor and sensory training, corrective and respiratory gymnastics, speech development and many other mechanical muscular actions which stir up the dormant senses of those who are mentally deficient. Dr. Pogue's efforts are directed along the lines of the promotion to usefulness of those otherwise dependent subjects. Her address was very valuable as an aid to the profession and we regret that it may not be printed in full.

A committee was appointed on the nomination of a chairman for the next meeting. The committee consisted of Prof. O. J. Shuster, Miss Anna E. Schaefer, and W. F. Gray. The committee retired and unanimously agreed upon Supt. A. J. Hutton, of Waukesha. The nomination

was reported and put to the audience, who unanimously passed upon it. Superintendent Hutton was declared the next chairman.

We then listened to a paper on the "Education of the Incurrigibles," by Supt. A. J. Hutton. He stated that he had boys sent to him from the courts under sentence for some cause or other to last during terms varying in duration and averaging about twenty months. He objected to the thot of branding them and treating them as criminals, incorrigibles, and vagrants, but wished to consider them as boys, and subject to the same conditions as other boys, in short, he wished them considered as boys, nothing more or less. He therefore did not wish to belittle them by seeking some other measures than that perscribed by our great educators but proposed to find the remedy from the same sources that other boys were educated. He preferred to consider his boys as among the backward and stated that you acquire power over a delinquent boy in the exact degree in which you think of him and deal with him as a boy. Every boy should be trained for service as well as the perfection of his powers. The kind of service should determine the kind of training which principle holds good with all children, including incorrigibles. Every boy should be trained to earn his bread and butter by honest and honorable means. He should never get the notion that the world owes him a living. He should not live on his father until he gets married and then on his wife's folks ever afterward. The girl should be trained to be a good home maker and the boy a good home provider. He must not spend all his time in earning bread and butter, but must be taught to take his place as a citizen to contribute to the support of the state in paying taxes and performing other public duties. Things which are necessary for the higher life must not be forgotten. Boys should be well grounded in the four fundamentals of Arithmetic and skill should be the acquirement and knowledge alone but automatic skill. Boys like to do things they can do well and they do not acquire a taste for good reading until they acquire a good degree of skill in it. They should be taught to admire the quality in great men of history and invention, which made them great. They should be taught the skillful use of the ordinary tools necessary for earning a living in some one of the useful arts. That the door leading to spiritual life should always be invitingly left open to the end that our backward truant and delinquent children shall cease to be incorrigible.

At the close of Superintendent Hutton's paper the Department of Special Education adjourned, having listened to an instructive program, all of which we would be glad to have printed were we allowed the space.

W. F. GRAY,
Secretary.

PHYSICAL EDUCATION.

- Officers: President—Geo. C. Wittich, Director of Normal School, N. A. G. U., Milwaukee.
Vice-President—N. J. McArthur, Physical Director, Stout Training School, Menomonie.
Secretary and Treasurer—Emma Shrieves, Director of Gymnastics, State Normal School, Milwaukee.

WISCONSIN PHYSICAL EDUCATION SOCIETY.

The general meeting of the Wisconsin Physical Education Society, which is embodied into the Wisconsin State Teachers' Association, was held in the gymnasium of the State Normal School at Milwaukee, December 27, 1905.

In the absence of Miss Shrieves, Mr. E. D. Angell of Madison was elected secretary pro temp. In his opening address the president, Mr. G. Wittich, spoke on the physiological effects of the various forms of exercises based on the views of Dr. Schmidt of Bonn University, Germany, on this subject. The speaker emphasized in particular the detrimental effects of the so-called strength exercises in the general development of the young and gave reasons for his arguments such as the using up of the repair matter necessary for growth, the disturbed circulation and respiration. The *exercises of endurance*, their detrimental and beneficial influences was the next topic of his talk, and lastly he spoke of the worthlessness of tactics as exercises of attention, if carried on in an extreme manner in the physical training of the young. In his conclusion the speaker gave an outline of the correct manner of applying the various forms of exercise in the primary, grammar and high school grades.

Dr. Elsom, of Madison, the next speaker, had chosen "The Building of Character through Physical Exercise" for his subject. He pointed out in able manner the various ways in which physical exercise can be employed in promoting resoluteness, determination and grit, as well as the forms of exercises that can serve this purpose and the influence of the same on life after school days are over.

Mr. E. D. Angell, of Madison, exemplified with those who were present a series of schoolroom games in which chalk and blackboard are the only apparatus. He demonstrated very nicely how these games can be graded so as to suit the faculties of the different grades of pupils.

Mr. F. Lorenz, of Fond du Lac, spoke of the future of our profession. The culminating points of his talk were the advice to the in-

structors to work with might and main for popularizing systematic education and putting as much as possible a damper upon the present form of athletics and national games.

Mr. McArthur, Mr. Elsom, Mr. Lorenz, Mr. Wittich and Mr. Angell took part in the discussion.

After the discussion the attention of those present was drawn towards the more inner affairs of the Association, and the following resolutions were adopted:

Resolved, That the four annual meetings of the Association be abolished as impracticable, due to the distance of the districts from one another, and that the state of Wisconsin be divided into three districts according to the sections of the State Teachers' Association.

Resolved, That the president shall appoint at least two members of each of these districts to attend the meetings of the sections of the State Teachers' Association and see to it that papers bearing on physical education are read and that the subject of physical education is kept before the educators continually.

Resolved, That the secretary send out a circular in which this new project is announced. Also that the *general meeting* of the Physical Association takes place during the Christmas holidays in Milwaukee together with the general meeting of the State Teachers' Association.

Mr. Wittich was re-elected as president, Mr. McArthur was elected as vice-president, and Miss Allerton as secretary and treasurer.

E. D. ANGELL,
Secretary pro temp.

MANUAL TRAINING, DOMESTIC SCIENCE AND DRAWING.

Officers: Chairman—H. C. Buell, Superintendent of Schools, Janesville.

Secretary—Ora Blanchar, Teacher of Cooking, First District School, Milwaukee.

Treasurer—C. F. Hill, Manual Training Instructor, Public Schools, Whitewater.

The Manual Training and Domestic Science conference was held in Recreation Hall, Wednesday at 2 P. M., with Mr. H. C. Buell, superintendent of schools, Janesville, in the chair.

Miss Emma Conley, School of Agriculture and Domestic Science, Wausau, gave a very interesting paper on "The Course of Study in Domestic Science."

A COURSE OF STUDY IN DOMESTIC SCIENCE.

Emma Conley, Marathon County, School of Agriculture and Domestic Economy.

Though the subject assigned to me on the program is "A Course of Study in Domestic Science," I was asked by the Chairman to discuss the relative value of the different forms of hand work as sewing, weaving, basketry, hat making, wall-paper designing and kindred subjects. Hand work includes some of the work that belongs to domestic science but domestic science does not include weaving, basketry, wall-paper designing, raffia work, etc. This work belongs to the kindergarten, first primary and to the art department and I shall speak of it but briefly. The educational value of this work is very slight. It is excellent work for kindergarten and first primary, otherwise it is busy work. When we consider it from the standpoint of art, there is value in the art design. This can be original. In the actual work there is no advancement, once the stitches are learned there is nothing more to learn, there is no knowledge of materials for the material is always the same and is prepared ready for work. There is no cutting from the rough material as in carpentry, no growing knowledge of tools and their care, no progress. The value of this work is so limited that there is danger that it will become mere busy work instead of training for the hand, cultivating observation and constructive power, and developing the mind as manual training should.

In domestic science the object is to train the hand, to teach neatness, accuracy and economy; to develop the home interest instead of the money getting faculty; to teach the dignity of household science and art. The object is two-fold, the value in the training and the value of being a trained woman.

The state educates the teacher, the lawyer, the farmer, why not the home maker? It is just as important a profession as any of those mentioned, for the welfare of the nation depends on the home. Domestic science should be incorporated in every school curriculum because of its educational as well as its practical value. However, I do not believe in a domestic science course, a course set apart for domestic science work. Too much of this work must be put in to fill up the course and other important studies are left out. The girl needs an all around development. Then, too, normal schools and universities do not give credit for this work. The girl deprived of many studies that she needs to enter a higher institution of learning must make up

the work before she can gain admission and she is discouraged. If she chooses some other course she cannot have the domestic science work. Many objectors say that this cannot be done, that the all important Latin or Mathematics cannot be sacrificed one day in the week; that manual training and domestic science cannot be incorporated in all courses of study. It can be done and is done so successfully at Menomonie, Wisconsin, that the school system there serves as a model for others to follow.

For a course of study in domestic science I would suggest:

Fifth and Sixth Grades—

Hand sewing. Twice a week. 30 min. periods.

Seventh Grade—

Drafting, cutting, making of undergarments.

Use of machine.

Twice a week, 60 min. periods.

Eighth Grade—

Plain cooking. Study of principles involved. Study of food materials.

Twice a week, 60 min. periods.

First Year, High School—

Cooking, planning, cooking and serving of meals.

Marketing, care of dining room.

Carving and serving.

Second year—

Study of composition and nutritive value of foods.

Adulteration and preservation of foods.

Chemistry of foods.

Third Year—

Hygiene, sanitation, care of home, laundry work.

Fourth Year—

Dressmaking, drafting, cutting and fitting and finishing shirt waist, dress skirt, and whole dress.

The paper aroused considerable discussion as to the amount of busy work which should be given in the lower grades.

“The Teacher of Manual Training” was the title of a very interesting paper by George Fred Buxton, the well trained teacher of the Teachers’ Manual Training School of Menomonie.

Mr. R. H. Halsey, president of the Oshkosh State Normal, spoke on "The Present Status of Manual Training in the Public School System," and Mrs. Alice Peloubet Norton, School of Domestic Science, University of Chicago, spoke on "The Social Value of Domestic Science."

The conference was attended by some fifty persons who were interested and who showed their interest by discussing each paper as it was presented. The lateness of the hour cut the discussions short.

ORA A. BLANCHAR,
Secretary.

PAPERS READ AT THE GENERAL SESSIONS.

THE BATAVIA SYSTEM.

By John Kennedy, Superintendent of Schools, Batavia, N. Y.

The Batavia system was started in November, 1898, and has been in successful operation ever since. It is a combination of class and individual instruction in which the latter is used as a corrective and regulator of the former. It grew out of a conviction resulting from long experience that class teaching alone cannot educate the masses; that class teaching has in itself a tendency to become stalled and inoperative and that any attempt to force it along converts it into an agency of destruction. Supplementary individual teaching disengages it, relieves it, and enables it to become a most powerful agency in the attainment of the highest educational ends. We think that we have blissful evidence of the truth of the last proposition. Education in Batavia is free; free from pinch, dead-pull, strain and every form of violence; free to move forward steadily and unchecked in the education of our children. Our children are moving forward in their educational course; all of them; we have none reeling in the ranks or falling by the way-side. We are conscious of no draw-backs whatever; we feel that it is a great privilege to teach; and we do not hesitate to say that all our children enjoy going to school. Our grades move forward and are promoted as wholes. We have no left-overs. A left-over is one who has not been attended to. A left-over is one foredoomed to failure and who is merely tolerated in school. A child needs more than mere toleration in order to get an education. He needs to be taught, and the Batavia system makes provision for teaching him. If the class suffices for a child's needs, the class becomes his sole regimen. If the class does not reach him, the individual chair does. So we are organized for every contingency. Our pupils are all taught either in the one way or the other. Therefore our pupils are all moving forward in unretarded and unforced troops toward a common goal. We have nothing to explain away. We supply the individual instruction in two ways. In rooms having more than fifty children we have two teachers, one giving class-instruction continually

and the other devoting all her time to the special needs of individuals. In rooms having less than fifty children one teacher gives both forms of instruction in equal alternating periods of time. The two-teacher arrangement suggests the relative proportion of each form of energy. There must be as much of the one as of the other. If you recognize individual teaching at all, recognize it heartily. Be not grudging of good things. To throw a sop to reform is but to make a confession of guilt, while intimating a desire to remain guilty. A period at the close of the day for individual teaching, or a period once in a while for that precious work, is only snapping at a name. And a period for this work when the quick ones are gone is only a humiliation, an exasperation, a punishment. The purpose of individual teaching is to break down segregation and insidious comparisons, not to promote them. Avoid the Procrustean bed of unrectified class instruction, and at the same time avoid the stigma that penetrates the soul. All our children belong to class, and get what they can from it, till such time as they can get it all. The class-teacher ignores the laggard, except to refer him to the individual table. She gives all her thought and energy to the class, and has her class moving at a pace that meets the needs of the quickest pupils. There is therefore no retardation, no waiting, no marking of time, no arrest of interest, no dropping thru listlessness into indifference, and finally into mischief, disorder, and failure. Nor is there any strain to force a flagging interest, nor is there any uncharitableness or persecution; no fret, no fury. And the individual teacher brings on the laggards to maintain themselves in a class that is steadily moving. What is necessary to be done is done. The Batavia system forestalls tragedy and failure. It recognizes the law of the matter and provides for contingencies. The two teachings are adequate for every need. But on the whole we recommend the two teachers. Build large rooms; get large grades and classes; you thus get a larger interest and other advantages. Incidentally you reduce the cost of education by reducing the number of rooms and enlarging the size of the classes. The Batavia system craves large numbers. And you further reduce the per capita cost of education by securing a higher average attendance. The class teacher is the commanding officer who exacts a definite service. The individual teacher trains to ability to perform the service. Ability to do can only come thru doing. The individual teacher is at every moment appealing to initiative. The class teacher assumes that her class can move on. The individual teacher assumes nothing. She goes to where the child is and brings him on; not by carrying him, but by causing him to walk on. He is as glad to find that he can walk as she is to get him to walk. He is as glad to get out of a maze as she is to get him out.

The class demands study; she makes him a student. And her service not only brings on a child in a grade but adjusts a child to a grade. It enables us to assign a child on his highest line and work up his backward matter at the individual table. And it enables us to bridge over the gaps of absence. There is no contingency that our system does not meet fully. We are not drawing lines on children. We offer them the best we have, and see that they get it. And therefore they are happy as well as successful.

We are training all to independent studentship. We see that every child shall know the zest of unchecked action. We see that every child shall have a perfect circulation of his mental blood. But the two things go together; it means a perfect circulation of the physical blood. And yet we hear of the "pale student." The student may be pale because of his studies, but never because of his success in study. "Not work but worry that kills." Action is life; and I think that we are proving that high mental action is high physical life. Would you have children healthy, strong and beautiful, just give them a wholesome and glowing initiative in school matters. Under our system you cannot impair the health of a child, and you cannot fail to promote the health of a delicate child. A Batavia school is the best kind of a sanitarium, because its key-note is encouragement and properly adjusted activity. Composure is not only the condition of health; it is health.

Our whole system turns on the question of does the class suffice? The class does not suffice for children who are behind it, nor for children who are ahead of it. The former are dragging despairingly, the latter are losing their interest. With us the former are reached by individual attention, the latter by bringing the class up to them. We put in strenuous work at the bottom, but we gauge everything by the top. We give the quicker ones their rein and we form all the rest on them. We have no retardation, no drags, no clinkers, no left-overs. We work from the bottom up, instead of from the top and never getting down. We solve even the top from the bottom. Some would skim the top. There could not be a greater pedagogical mistake, to say nothing of its impolicy and injustice. The greater always includes the less, and the slow child is the greater. If you secure the child at the bottom you of necessity secure all above him. If you secure the child at the rear you of necessity secure all in front of him. This solves the school problem. And there is no other solution. There are other plans, but they do not solve. They dissolve. A stalled school tends to go to pieces, and sifting and segregation only help on dissolution. When the rising air at the equator has lost its expansion it tumbles over and down. When the schools fail of free action and

proper stimulus the children tumble out. The disappearance of children is sometimes yearned for. But on the whole I think that the falling out has been rapid enough to satisfy a very exacting mind. We are getting statistics on the subject. In his monumental work on Adolescence, Dr. G. Stanley Hall estimates that about fifty per cent of our school children, taking the United States as a whole, disappear forever from the schools before reaching the fifth grade. Three-fourths of the remainder disappear before completing the eighth grade. And of those entering the high school, three-fourths disappear before reaching the last year, leaving about from one to five per cent to graduate. These figures are for the country as a whole, and they would seem to argue that schools as operated have a very decided tendency to get rid of children. This is where the explaining comes in. But these figures cannot be explained away. They can be reduced somewhat by eliminating losses that are unquestionably due to outside causes. But there will remain an appalling aggregate that must be charged up to the schools. The children came, and were not retained. There are losses under the Batavia system; but they are certainly growing "smaller by degrees and beautifully less." We have already about doubled our high school and we have strong grades moving toward it all over town. The congestion in the upper stories is still going on. This is the reverse of tumbling out. But that is not all of it. Seventy per cent of our increase is boys. The black coats are beginning to swarm in the high school classes and almost to predominate there.

The combination of class and individual teaching does suffice. When you find high schools doubling their attendance in a few years and seventy per cent of the increase boys, it ought to give you comfort. You see the future rulers of the country under training instead of on the street. I have heard experienced educators say that the snow-line for boys is away down, that the lack-lustre comes into the boy eye soon after the early primaries. To see boys swarming into a high school and applying themselves there, would show that something does suffice. And when you see this going on everywhere, and under every variety of environment and condition, you will conclude that there is something in system.

You can vitalize a school system, but you must do it by very large amount of individual teaching. It is no vitalization of a school to subject it to what in courtesy alone may be called vivisection; to cut loose the brighter pupils and let the slower ones sink to the bottom like lead. When once you begin to cut the thongs you will never stop. And you do not thereby check the falling out of children. You only precipitate it. To the losses of a deadly grind you but add those of sloughing off. It is no charity to children to leave them behind.

And it is no charity to children to fasten upon them the stigma of inferiority. Upon the errors of teaching we drop the forgiving tear, but its sins try us sorely. It would scarcely be inaccurate to say that children are missing from our schools because they have had lines drawn upon them, because they have been practically ejected. The school gets rid of children whenever it breaks their bodies or breaks their hearts. And it also gets rid of them whenever it breaks down their interest or ambition. The inspiration of modern liberty is trust in the people, in all the people. And this should never be forgotten in the schools. If our schools are to be a well-founded bulwark, we must have faith in all the children. This faith exemplified in works arrests the school tragedy and with it the tragedy of the ages.

Class-teaching does not suffice. I will cite another authority quite as eminent as Dr. Hall. President Eliot of Harvard University, in common with other patriots, views with alarm the rapid spread of corruption, the rise of a protetaire, the mortal collisions of classes, and the ugly spectre of anarchy. And well he may, for in the shadow of Crassus and Catiline there always stalks the apparition of Caesar. Republics seem prone to leave their golden age behind them. It was, however, over two hundred years from Fabricius to Crassus. It has been less than fifty years since Lincoln. Dr. Eliot says that our education has failed us, that it has given us only a dream of security from which we are awakening to a realization of great danger. He says that we must make our education more efficient or see consequences the most appalling. The responsibility is properly placed and is bravely accepted by a leader in our own profession. The future of social order and civil liberty rests with the schools. And I believe that the schools redeemed from fatal error will be quite equal to the emergency.

Some think that the educational problem is merely a question of good teachers; that all they need in order to make a success of their schools is to have a large pocket-book and go around the country culling the strongest teachers. But this is not a solution; it is only a deceptive palliative. Good teachers are a solution when they are placed where they will not waste any energy, and where they will not wreck themselves with the impossible. It should not be forgotten that the good teacher may become a poor teacher. Once over-strain a good teacher and you make of her a poor teacher. Once worry or irritate a good teacher and you make of her a poor teacher. If you place even a good teacher under conditions that are discouraging or exasperating you imperil not only her health, but her teaching. And you also imperil the children under her. Not even a good teacher can save a bad system. Poaching upon our neighbors' preserves will not save our

schools. That may well be left to some corporations that do not profess to have souls. With us it is an utterly useless wrench of conscience. The schools cannot be redeemed by the sin of covetousness. We must lay deeper and stronger foundations than that.' I have no personal grievance against the old system. It is least fatal to superintendents of any class exposed to it. When the team is overloaded that does not hurt the driver much. It is remarkable how well we can bear up under the sufferings of other people. A driver of overworked horses may become so seasoned that Mr. Bergh has to step in to save the team. I wish that Mr. Gerry would step in oftener to save the children. But who will save the teachers? "There is a God in Israel."

The Batavia system does not spoil a good teacher. It makes her usefulness perennial. And if it is at all possible for one to become a good teacher, the Batavia system develops her latent power. This system is an ideal normal and training school. Would you become a good teacher study a little child. And that is what all the Batavia teachers are doing. Child-study is at the root of our profession. Class-teaching alone cannot make a great teacher, because it lacks the fundamental opportunity. Or rather the opportunity comes but is not seized. The slow child comes, but his presence is resented. The opportunity comes, but it is persona non grata. We have heard of angels weeping. The weeping child is an angel who has come among us unawares. When he weeps, the tragedy of the schools begins, and with it the tragedy of the ages. The good teacher is she who takes an interest in all her children, who is their friend, who understands them all, and who knows how to reach them all. The good teacher is she who never allows herself to be invaded by impatience, uncharitableness, or bitterness. And a system that tends to rob her of this supreme qualification is altogether vicious. When the Savior directed us to learn of little children he had especially in mind the slow child, the helpless child, the needy child. But the weeping is not always restricted to the slow child. Any child may fall upon trouble. We forestall trouble with all classes of our children by anticipating it and being prepared for it.

The school-master has been abroad; but he has been abroad with his classes alone, and he has often been abroad to our sorrow. It is a law of our nature that we cannot be stationary; we must be either advancing or receding. A school cannot be a neutral place for a child; it is either a very good place for him or a very bad place. I know that a school can be a very good place for a child; an asylum, a retreat from every danger, physical, intellectual, and moral; a garden of every virtue; a stimulant to the noblest aspirations; and a training

ground for the highest forms of power. And, alas! I think I know that schools can be something very different. Have we not a genius for machinery? Have we not been tempted to handle our children wholesale, just as we handle our cattle? Have we not overlooked the individual in order to get our thot on the genus? And are we not taught that genus is only a term, with no corresponding reality anywhere in creation? Have we not undertaken to make a business of education, and to dispatch it in the lump? Have we not driven our machinery hard? Oh, what a bad place a school can be! And then to think of the truant officer back of it all. Oh, no, you cannot lift up a generation of children with windlasses and tackle.

Every one of those little ones is precious in the eyes of his Redeemer, and woe is denounced against him, who would offend him. Every one of those little ones has rights that are sacred; and machines are not discriminating in such delicate things as rights. Machines are like corporations, they have no souls. The teacher of childhood should be all soul.

We know the danger of ignorance, and so we start out to get rid of it; and we are so determined to get rid of it that we even lay violent hands upon the children. We do evil that good may come. Perish the doctrine. Good fruit does not form on an evil stem. "As we sow so shall we reap." "By their fruits ye shall know them." "Blessed are the merciful, for they shall obtain mercy." The first problem of education is to arrest all violence and destruction. If Rachael weeps for her children because they are not, or worse than not, some one will weep at the bier of liberty. Human society has in itself the supreme motive to be just. We must save the children in the schools from the schools; and that is what the Batavia system is doing. The Batavia system has rendered schools absolutely innocuous. This is its humanitarian side; and its achievements in this direction will rank it with the very greatest reforms of the ages. It is a new rescue, a new emancipation. I commend to the doctors the medical questions involved; and to philanthropists, temperance societies, mothers' clubs, Christians, patriots and publicists, I would say that your problem is here. You will vainly beat the air if you do not arrest this doing of evil to the end that good may come.

We must educate the children if we would forestall Caesar and the barbarians. And to do this the class becomes a powerful, a necessary instrumentality. The eye will lose its lustre and the children will disappear from an unclassified school as well as from a school that is classed to death. No school has more aching voids than the ungraded school. But they do not make the heart ache quite so badly. Children

do not vanish from the ungraded school into the hands of the doctor, nor into the hands of the undertaker, nor into the hands of the policeman. Our schools in Batavia are very highly classed; that is, we are organized to secure the highest economy of service and the great stimulus of numbers. But because of our corrective in the way of individual attention our classes cannot possibly grind; nor can they strain, nor worry, nor kill; nor can they clog or stall themselves. They go sweetly, smoothly, and beneficently on, and they cannot go any other way. We have the apparent paradox of action in repose, but it is not the repose of a log jam, nor of any other blockade. It is the repose of spirit out of which all great effort springs. No fidgeting, no nagging, no despair, no rebellion.

Corruption paves the way to the throne and lines it with halberdiers. Liberty's only safeguard is a public opinion so enlightened and strong as to make ambition and its parent, corruption, wither as under a blast of lightning. Every child is a possible Cassius or Cato, and every teacher has at every moment an historic opportunity. Our system endeavors to rise to the opportunity and not to rest satisfied either with perfunctory service or a resort to naked force. We find our lines of least resistance by seeking lines of greatest resistance. We lift where the load is heavy. It is good sense not to quarrel with a millstone. We transform the millstone into a buoyant lifting force, instead of a dead weight. If we seem to be carrying the children for a time, they in the end carry us. We ride on a great wave of buoyancy that converts our function into mere pleasant guidance. We get rid of all burden by teaching it to walk and run. The only slaves and packhorses in education are those who assume that children should educate themselves. A Batavia teacher never starts toward the sanitarium. The supreme condition of sound teaching is sound health. *Sana mens in sano corpore.* Disturb the body by strain and you disturb the mind. Wreck the nerves of a teacher and you have the children shut up with more or less lunacy. Our modern world will yet trace the source of its endemic nervous debility.

We are not offering a substitute for the graded school. Our system is the graded school in its integrity; but it is the graded school perfected; it is the necessary evolution of the graded school, which we regard as one of the greatest contributions of the ages. The extraordinary growth of cities and urban centers in the last fifty years made a new type of school necessary. Organization and distribution of effort became under those conditions absolutely unavoidable. To abandon the graded school would be a historic calamity; and yet that is what is foreshadowed in some late innovations. It is not innovation

that we need, but evolution. Innovation is cheap. The solution and the dissolution of the graded school are two very distinct things.

I yield to no man in my admiration of the great inventor of the reaper. And yet I think that it is no detraction from Mr. McCormick's fame to say that his reaper could not be sold in the market today. Mr. McCormick never expected that the reaper which he manufactured would sell in the market today. And yet with all its improvements it is his reaper still. Not a single laurel-leaf has been torn from the chaplet which will surround his brow forever. Other men have pondered long on how to get rid of the pinch, the dead-pull, the side-draughts, the destructive lurching, and the many dangers to the material and to the operator, which are inevitable in a new invention. The perfected reaper sings thru the fields today, and it will ever sing the praises of Cyrus H. McCormick. And justly, for his invention contemplated improvements. Every painter from Fra Angelico to Raphael advanced upon Masaccio's perspective and foreshortening, but it is in the Brancacci Chapel alone that the head of reverence bows, the chapel in which painting was set free.

The theory of the graded school is that you can marshal children and young people into companies, and cause them to move forward shoulder to shoulder thru a course of education. We believe in this theory most fully in Batavia. And it is because our children are actually doing that thing that we are visited as a sort of educational Mecca.

Class-teaching attempts to justify its losses by falling back upon the inevitable, and by quoting Mr. Darwin's opportune law. We deny that any falling out of children is inevitable by reason of their nature, unless they are mentally deformed. Slowness of mind, lack of concentration, timidity, and initial inability to grapple with school work, are not included in our idea of deformity. These are mere conditions of mind, not qualities, nor varieties. A body of soldiers will astonish one with the alertness and absolute precision and uniformity of their movements. The drill-master, however, knows out of what variety of condition and aptness this uniformity has resulted. A crowd of bicyclists flying by, and sporting with the abandon of a flock of doves, gives no hint of the variety of timidity and clumsiness out of which it has all come. But the trainer knows. There is no Darwinian law for soldiers or bicyclists. The awkward squad is a squad of one. The man must be taken out of the line to keep him from falling over his own gun, or from tumbling over his own feet. He is first trained according to his individual condition; his immediate goal is to become able to stand and move with his company; his ultimate goal is to become an accomplished as well as a brave soldier. He may again stag-

ger in the ranks, but it is not from the loss of his training. He now needs the ambulance instead of the drill-sergeant. He is too good a man to be lost; his case has been anticipated; the ambulance is forthcoming.

Later he may need the railroad train to catch that army that could not wait for him, but which needs him and welcomes him back to the line. It needs all of military science to win battles. Ignorance and blundering are too costly. An army cannot afford to destroy itself; it must know how and where to ease up, as well as how to put on pressure. It must have no leaks, it must not dissolve nor disintegrate.

Under a figure I have been giving you a hint of the attitude of the Batavia system toward education, toward education as a business. The Batavia system makes provision for contingencies. And in doing so, it remedies the salient and fundamental defect of the graded-school, and of all class-teaching. It makes the reaper sing; it offers a regiment for battle instead of a corporal's guard.

We watch the varied necessities of our children while winning them to a common goal. We get them ready to enjoy, to covet, even to clamor for the word of command. They are more than willing to go to the full bent of their powers; they know that we will not ask them to do more. And we credit it all to the system. We know the other side. We had longer experience with that than with the Batavia system. We know what it is to empty schools. We know what it is to distribute children. We know what it is to do violence, and to do it conscientiously. That is the worst violence of all. When we now hear the "survival of the fittest," we say, "Get thee behind me, Satan." "We have not a child but what is fit to survive. And we have not a child but what shall survive."

"Delightful task! to rear the tender thought,
To teach the young idea how to shoot,
To pour the fresh instruction o'er the mind,
To breathe the enlivening spirit, and to fix
The generous purpose in the glowing breast!"

The Batavia system is primarily and fundamentally a system of protection. The children, the teachers, the parents, are safeguarded from every possible harm. It is made the duty of teachers to find out distress and relieve it, never to create it. A pupil's needs are the exact measure of his rights. His needs and rights are the exact measure of someone's duty. Someone fails in duty, someone is positively dishonest, the square deal is broken, if the child is deprived of one iota of his right. If we have gained any fame in Batavia it has been through simply trying to discharge our whole duty.

There is in the Batavia system no issue of individual teaching versus class-teaching. Never before in the whole history of education has the class received such emphasis as a factor and force in education, as in Batavia.

Individual teaching has its limitations, and yet it was capable of training an Alexander the Great and a Marcus Aurelius. It has its limitations in that it lacks the multiform stimulus of class-teaching. It has its dangers in that it may be perverted into coddling. But at its worst it never kills. At its worst it never fails to make a very decent member of society. It never creates a hoodlum; it never creates a gang. It is a mildly inoffensive thing at its worst; it never makes the head reel; it never makes the heart sink; it never impairs rest; it never heats the throbbing brow; it never causes anguished watches in the night; it never causes the heart-strings to snap with supreme sorrow; it never makes parents grieve for their living ones. At its worst it is entirely innocuous and inoffensive. But at its best it is the most uplifting agency that has ever appeared in this world. At its best it is the only hope of this world. It is at its best when it is soothing the sorrowing heart of childhood; when it is reviving the drooping courage; when it is persuading the timid fledgling that it has wings to be used; when it is gently compelling initiative and inspiring a desire for flight; when it is bringing to the features the radiant smile of confidence; when it is suffusing a timid soul with the very spirit of challenge. That is not coddling; that is training young lions, young eagles, young heroes. It is at its best when it is converting a teacher into a sympathetic angel and into a marvel of wisdom. "Out of the mouth of babes and sucklings" cometh our best instruction. The teacher bending in sympathy to the needs of an individual child gets infinitely more than she gives. She gets the renewal and perpetuity of her youth, she gets a heart growth that leaves her transfigured, and she gets illumination and horizons of knowledge that place her among the great ones of the earth. Surely "It is more blessed to give than to receive." Had she remained a mere forcing arm in a remorseless machine, her frame would have been wrecked, her character perverted, and her possibilities of either happiness or usefulness destroyed.

The failure of education has not been the fault of the teachers. They have tried to succeed. They have spent themselves on their work. They have not only given the service required, but they have given much service gratis. They have submitted to do evil that good may come; but they have tried to do good by stealth. They have stayed hours after school to bring on the laggard. This fact will stand to their immortal credit. They tried to do good by stealth, but

did not "blush to find it fame," for the conditions were all against them. They were in a state of exhaustion, and the pupils were not in a state of tranquility. The invidious comparison was made, even with the best of intention; and detention savors of delinquency. It is a common form of punishment. Never put a premium on quickness, for you thereby put a stigma on slowness. Interest is the only justifiable spur in school-work. The same blunder is made in sending children to a room for dullards. Is not that where delinquents are sent, the truants and incorrigibles? The patience of parents in the treatment of their children is remarkable. But they do not all submit. One cause of the exodus of school children is the tacit revolt of parents. There have been parents who have refused to feed their children up to Moloch. We in Batavia have not undertaken to do good by stealth; we have undertaken to do it openly and frankly; and we have "blushed to find it fame." We have brought forward into the school hours an agency long recognized as necessary. We have recognized it officially as a factor, have incorporated it into our system, and have provided for its regular operation. Individual teaching has been knocking at the door of our hearts for half a century, and it has at last succeeded in opening the doors of our schools. It sits enthroned at our school tables, a veritable angel, and angels always bring paradise with them.

Blackstone defines equity as a special means of relief wherein the law by reason of its universality is deficient. By substituting class-teaching for law and individual teaching for equity, he has exactly defined the function of individual teaching as it is used in the Batavia system. Pedagogy is following its neighbor of the courthouse, the several centuries behind.

The presumptions of law as to criminal negligence are often swift and sure. A Buddensiek goes to state's prison, a railroad company is mulcted in heavy damages. I am not sure that schools are not sometimes exposed to an action of criminal negligence or for abatement. I would as soon think of leaving the steam-boiler without a governor as of leaving a school without individual teaching. I would as soon think of taking the policeman off a crowded street as of taking the individual teacher out of a crowded school. With a sufficient sprinkling of individual teachers you cannot overcrowd a school; you can only inspire it. The numbers are their own inspiration. The bane and the antidote are often the same thing. It is the herding of children under pressure that makes us tremble for them and for our country. And yet great crowds of children under wholesome stimulus are the most inspiring sight possible to a philanthropic or a patriotic mind. It is the concentration of population after all that has revealed the art and science of teaching.

The science of teaching may be summed up in one great principle, that the welfare of every child is the end, and that the class is only one among many instruments or means. It is an indispensable means, and under right conditions it is the most powerful instrument of all. But it is a very dangerous and destructive instrument when used by itself alone. It is then the iron bed of Procrustes. It is then the car of juggernaut, grinding remorselessly whatever comes in its way. The Renaissance for other departments of that occurred five hundred years ago. Are we still wandering in an educational dark age? There is scarcely an evil that I have been combating that has not some pedagogical authority to back it up.

"But this rough magic

I here adjure; * * *

And deeper than did ever plummet sound,
I'll drown my book."

But I would not start an Omarian fire. We have books on teaching that are worth their weight in gold.

The art of teaching is essentially a matter of attitude. The teacher's success or failure will be determined mainly by her attitude. If she elects to be the shepherd and trainer of children it will be very difficult for her to fail. If she elects to be the driver of an educational car of juggernaut, it is impossible for her to succeed. It is an awful thing that she can make such a dreadful choice as the latter. It is Satanic where she is compelled to make that choice. Old Governor Berkeley said that he was glad that there was not a school nor a printing press in Virginia; and we have called him Mephistopheles. There is, however, a point of view from which schools and printing presses may be properly contemplated with horror. If he meant that the children of Virginia were safe-guarded against the violence and demoralization of schools, and from the use of poisonous literature, the old man merits a monument instead of execration. There are some men who are endowed with the gift prophetic. Solon's happiest man was not the man with the great treasury, nor the man with the learning of the schools, nor the man with the graces of the court. It was the poor and unschooled man, who had fed and trained seven sons and seven daughters, and who had launched them all on honorable careers, and then had the further felicity of dying in the battle front fighting for his country. John and Mary Shakespeare never entered school. They made their living, were respected, and left William Shakespeare to the ages. Abraham Lincoln was unspoiled of schools. Franklin was never hurt by them.

But there are schools and there are schools. There are schools that

keep the gloss on goodness, and train it up to intelligence. Untutored good men are as sheep among ravening wolves. They are not lacking in bravery, but they are oblivious of danger and are taken unawares. They are a tempting prey to the designing. But the trained good man is a terror to evil-doers. He is a support and pillar of the state, the assured bulwark of liberty.

"He reads much;
He is a great observer, and he looks
Quite through the deeds of men."

No, we will not erect a monument to Berkeley yet. We will try to have schools that will save the physical vigor and the moral stamina of men, and that will train native goodness up to imperial usefulness.

"A little learning is a dangerous thing,
Drink deep, or taste not the Pierian spring,
For shallow draughts intoxicate the brain,
But drinking deeply sobers us again."

Men are still young who read with complacency of the downfall of the Roman republic, or accorded to that catastrophe just a slight intellectual shiver. They reflected that if the Romans had only remained pure, like the Americans, they would not have lost their liberty. The same men are looking around now in amazement, and querying whether we have not covered more of the *facilis descensus Averno* in less than a generation than the Romans did in over two centuries. The Romans did not start for Avernus on wheels. They at least had the friction of the ground to moderate their descent. There were men even in Caesar's day who would not retreat from hopeless battle because it involved the honor of Rome; Caesar was past middle life when there were still men in Rome who could die for a principle. It took ages and centuries of the lust for gold to stifle that old Roman virtue.

But this is not a note of pessimism, even if it is a note of warning. German manhood failed to resist the iron legions of Napoleon. Fichte then appealed to German childhood. "The children are all that are left us. Let us train them and they will redeem German independence and restore the great flow of German history." One of those children dictated his own terms of peace in Paris, and went back to unearth the dusty German crown. The empire of old William fits on well with the empire of Otho the Great.

We have run on to dangers. We are even feeling the galling touch of shackles. But we have the children, and they are quite capable of saving us. Crush them not with a juggernaut; feed them not up to a Moloch; shield them in their helpless stage; warm their little hearts

with friendship and love; recognize their imperial possibilities; give them a training fitted for sovereigns; and they will give you chapters of history that will fit on well with Bunker Hill and Gettysburg.

THE BATAVIA SYSTEM—A DISCUSSION.

F. E. Converse, Beloit, Wis.

Recently, in company with Superintendent Dudgeon of Madison, I had the privilege of spending several days in Batavia and Ashtabula, O., for the purpose of gaining a better understanding of the Batavia system.

It was one of the most profitable, as well as one of the most pleasant school visiting trips I ever made, and I am convinced that Superintendent Kennedy has advanced an idea in school organization and management that deserves our most thoughtful consideration.

That class or mass teaching, in spite of all our efforts to perfect its method, moves too fast for the backward pupils and therefore needs to be supplemented by wise individual teaching; and that whenever we succeed in reaching and bringing forward the backward pupils, we at the same time help forward the stronger members of the class, are propositions that we are all agreed upon, I believe, and therefore need no discussion by me. In fact they are not at all new. Good teachers have always worked individually with their backward pupils, but that this individual teaching has been always as wise and effective as possible there is abundant reason to doubt. The best results along any line of endeavor are obtained only when the aims are clearly and prominently in the minds and on the hearts of the workers.

The Batavia *idea* puts into the minds and on the hearts of teachers clearly and prominently the aim of rescuing the backward pupils. A distinctive feature of the Batavia idea is the emphasis placed upon the theory that there are no dull pupils; that so-called dull pupils, if they are normal children, are merely slow and need only more time and patient individual teaching to enable them to understand their work and keep up with their class mates, at least in the essentials of the work. Superintendent Kennedy and the teachers of Batavia have proved that practically all of these slow pupils can be rescued from discouragement and failure. Believing this, the teacher's attitude and

spirit towards all such pupils changes. Conviction energizes and makes effective the teacher's efforts in their behalf.

That teachers be imbued with this belief, guided and inspired by it in their work, is, it seems to me, the fundamental of the Batavia idea.

A second valuable feature of the Batavia idea is that time be set aside, regularly, in the daily program, during school hours, for this individual teaching. We all know how insufficient and unsatisfactory in general is the individual teaching we attempt to do before and after school hours. On the other hand it was evident in Batavia that, by making it a regular part of the day's program pupils learn to look upon it in the best light and as a matter of course.

A third feature of the Batavia idea is that this individual teaching shall be individual teaching in the true sense of the word; that pupils needing assistance shall come to the teacher's side, one at a time, sit in a comfortable seat, and receive her patient, sympathetic guidance over or through his difficulty, unheard by the rest of the class.

I once thought the only essential thing about the Batavia idea to be the spirit. While I now believe the spirit to be fundamental, as said before, I also believe it essential that the spirit have a suitable time, place and manner in which to work. I heartily endorse the Batavia idea. I believe it to be practical and of great value.

The Batavia plan,—the application of the idea in the Batavia schools,—I have chosen to consider separately. The original Batavia plan, the two-teacher plan, I think must appeal to all of us as quite ideal. Class teaching and the class recitation are indispensable in school organization, not only as a matter of economy, but also because of the stimulus they afford to both teachers and pupils. The two-teacher plan does not in the least reduce the time, energy and thought given to the recitation or class teaching; neither does it interfere with dividing the class into two sections or grades, one of which may study while the other section recites, thus giving pupils training in independent study, which many of us deem essential. Yet at the same time ample individual teaching may be done by the second teacher. I have little doubt therefore that in the future when school districts can afford it, President Eliot's remedy for further improving the schools by providing twice as many teachers for the same number of pupils, will be administered according to the Batavia two-teacher plan.

To reason from the success of this two-teacher plan that the excellent results are due, not to the two teachers, but to the two kinds of teaching, I think is perfectly legitimate, but to reason from the same premises that with only one teacher in a room, the teacher's time should be equally divided between class teaching and individual teach-

ing, leaving out of consideration the branch of study, the grade and the age of pupils, it seems to me, is at least open to question.

Besides the stimulating influence on both teacher and pupils afforded by live class teaching and recitations there are other essential results, such as (1) the fixing of facts, principles and general truths in the pupils' minds by the act of reciting, and (2) the training in language and the power of expression by frequent opportunities to recite.

In a one-teacher room containing 45 or 50 pupils in one grade, the Batavia plan requires that the entire grade be handled as one class or section, alternating class teaching with study and individual teaching. To conduct a live and effective recitation with 45 or 50 pupils in the class, to hold and direct the attention and that of these pupils as it needs to be done, it seems to me requires a teacher of more than average power. The larger the class the greater the difficulties the teacher has to overcome and the greater the proportion of pupils needing individual teaching.

In a one-teacher room containing two distinct grades, as must often be the case in any city, the Batavia plan requires that the classes recite only every other day. In this case the objection to too large a class does not hold, but the opportunity of the pupil to recite frequently is no greater than in the class of twice the size that recites every day, while the inspiration and stimulus of the class upon teacher and individual pupils is felt only half as often.

Up to this point in the discussion of the one-teacher room on the Batavia plan I have had in mind every study and every grade from the first through the high school. Other queries may be raised: (1) Is this plan of dividing the time of one teacher equally between class teaching and individual teaching as desirable or acceptable in the lower primary grades as in the middle and higher grades? (2) In the middle and higher grades with one teacher thus dividing her time equally, will each subject receive its fair share of time and attention? (3) In the high school is the plan of having each teacher divide his time equally between the two kinds of teaching as acceptable in the study of history, for example, as in algebra? Not only my judgment, but my observation also, lead me to answer these queries in the negative.

With young children in lower primary grades the work is largely reading and language; the class exercises must be short and frequent. These pupils can "study" with very little profit at their seats—at least except for very short periods; for them the class exercise is very essential. To have 45, 40, or even 30 of these children doing "busy work," or attempting to "study" in their seats half the time while their one teacher is helping one pupil at a time, seems to me to

come dangerously near to wasting valuable time, or at least to doing injustice to a large majority of the pupils.

In the middle and higher grades I think it is quite inevitable that a large part of the individual help is given in Arithmetic and correspondingly less in other studies; so that a teacher in a one-teacher room, dividing her time equally between the two kinds of teaching, it appears to me, is very likely to give an undue share of the time to Arithmetic, perhaps, at the expense of good, vigorous practice in Reading, Language, etc.

In the high school possibly the average teacher can profitably divide his time equally between the two kinds of teaching in such subjects as algebra, Latin, etc., but it seems to me it would require a teacher of unusual resources to thus divide his time profitably in such a subject as history for example. He might do it if unusually well trained in the subject, and provided with an adequate reference library in the class room. But even then it is a rather arbitrary limitation to require him to devote all of every other day or period to individual teaching.

I desire to emphasize again that these adverse criticisms have reference entirely to the Batavia Plan in its application to one-teacher rooms and classes. The two-teacher plan appeals to me strongly, although even then I believe the results would be much better if the number of pupils were limited to 50 or 60. Further, I believe it a most valuable plan to have at least one strong teacher in the high school who sits in the study hall and devotes his entire time to individual instruction, as I saw it done in both Batavia and Ashtabula.

I will conclude then as I began, I endorse heartily the Batavia idea; I believe that some time should be given regularly during school hours to wise individual teaching; but that the amount of time so used should vary according to the need. In other words, I believe the Batavia Plan needs to be adapted to conditions and circumstances, and requires close and wise supervision.

“ETHICAL TEACHING IN THE PUBLIC SCHOOLS.”

Rabbi Samuel Hirschberg, Milwaukee, Wis.

The story is told of one of our noted men of letters, that he was present upon one occasion at a gathering, where the conversation turned upon the wonderful growth and development of our country so undreamed of a century or even a generation ago. Among those who joined in the conversation, was a gentleman of large enterprises, one of our modern captains of industry, who descanted in glowing terms upon the incalculable benefits which had accrued to this country thru the protective tariff, describing in particular how under its beneficent, fostering influence, his section of the country had prospered to an extent fairly magical, mighty industries having sprung up and tremendous wealth having been accumulated in a period of almost incredible brevity. To him our man of letters turned and with a benignant smile characteristic of him, but with the faintest suspicion of irony in his tone, remarked,—“that is all very well, my friend. I am charmed to hear of all this wealth, all these industries; all your mills, forges, warehouses and factories. But tell me, do they not turn out any men down your way?”

I need not say in a presence like this, who appreciate so thoroughly the high and sacred mission of their calling, that the great and essential task of education and educators, is similarly just this, ‘The turning out of men.’ President Elliot defines this task in these impressive terms: “What,” asks he, “is the real object of genuine republican education?” And he answers, “To my thinking it is the discovery and development of the inborn capacities and powers of each individual, and the increase through increased efficiency and serviceableness of his happiness, of his enjoyment of the solid human satisfactions—health, productive labor, and social and domestic life. The commonwealth, in all its provisions for education, should incessantly regard the individual. Its object should be to increase the efficiency of each unit, and therefore of the whole mass. The public power should promote individual efficiency.”

President Elliot is here of the opinion, and I think we all agree with him, that the only ground on which a republican form of government like ours can justify its taking over and arranging,—using even the

power of compulsion toward this end,—for such an important matter as the schooling of the youth, is the desire and purpose to insure both for itself and the individual the best and the most efficient service from the latter, thru promoting his best and utmost efficiency. Certainly the right of educating the individual is one which belongs naturally and preeminently, not to the state, but to the individual himself, and if he be too young to decide in the matter, to his parents or other natural guardians. If then the government steps in, and assumes to look after this matter for him and his legal agents, it may only be because it believes it can attend to the work better and do it more successfully with an eye to its own and his best benefit, than if he were left to pursue his own devices.

But now let us see how our schools carry out this theory. There can be none who is a more ardent admirer of our public school than I. I believe, with an unshakeable conviction, that they are justly and deservedly our nation's highest pride and glory. They are performing an invaluable service in raising the intellectual status of our people, in diffusing far and wide the blessings of intelligence and enlightenment. They are preparing the youth, as otherwise he could not be prepared anywhere near so masterfully, to grapple with the problems requiring clear, alert, and correct thinking, which later are to confront him in life. But yet our schools while doing all this, are not, I cannot help from believing, performing the entire service of which they are capable to the public. They are missing, passing by an entire side of their proper function, as I see it.

Established to promote the largest individual efficiency, as we have stated, this efficiency cannot be secured, merely by paying regard to the intellectual side of the child's and the youth's nature. If the state's active participation in the education of the young derives its only legitimate warrant from the desire and aim to have them become good citizens,—another method of expression for "efficiency" in co-working with others,—this cannot be accomplished merely by the training and development of the mental powers of those whom the schools have in ward. And yet this is what the public schools seem, almost to the exclusion of all else to be bent upon doing. Their entire effort almost, appears to be directed toward providing the pupil with a fund of information, and with exercises in the processes of reasoning, which will make his mind that reliable instrument of thought which will carry him to success in his future undertakings. While other instruction may not be lacking, yet it is only a sort of side issue, occasionally and incidentally given, and always relegated to a place subordinate to that of purely intellectual purpose and interest. And yet it is only too manifest that such other instruction, for the social effect it may

have in insuring a better and more helpful citizenship, may very frequently deserve to take rank before all mere instruction of the mind. It is a trite observation that a man may have had the advantage of the finest and most advanced scholastic education, and may be mentally gifted and endowed, and still be the most arrant of knaves, the most dangerous of menaces to society. He may have become an adept in all the sciences, and yet in his inflamed anarchistic hatred of the existing order of things,—like that character in one of Zola's tales,—may design to use that knowledge only for the wholesale destruction of his kind. He may be a fluent, accomplished linguist, a most polished conversationalist, scintillating with epigrams, and yet may employ his accomplishments, only the more easily to glide into favor with, and dupe and defraud his charmed and confiding acquaintances. He may be an expert, an authority in geography, acquainted with the latitude and longitude of the most obscure and unheard of places, and yet put his knowledge to no practical end, save to direct him where to flee, when he has wrecked a bank and made way with the trust funds of the widow and the orphan.

Instances of such kind then impress upon us the utter inadequacy of mere head, mere mental education, and the need of a larger education, the education of the character, the moral sense of the pupil as well, if he is to meet in the rightly efficient and faithful fashion the claim the public has upon him for its part in educating him. And especially should we be alive to this need today, when the prizes for mere shrewdness, sharpness of mind are so great, and success of purely material kind is set up so constantly and conspicuously before the youth's eyes as the main and prime thing for which he is to prepare himself in his studies at school.

Of course, as I have already indicated, I am not unaware of the fact that something like moral instruction is attempted in our schools; nor have I overlooked the fact of the powerful influence in a moral way the individuality of the teacher, going about his or her work in the right spirit of honest, faithful consecration, even without a single word of direct instruction, may exert upon the young nature. But this instruction and this influence, it must be admitted when all is said, are only of that irregular, occasional and uncertain character, which can never take the place, never approach in effect that which is purposed, regular, continuous and systematic, given at certain precise times and from a certain well defined method just as the other instruction is given.

I stand here then to plead for this regular, systematic teaching of morals in our public schools. I fully appreciate the difficulties which stand in the way of this, and the objections to it which may be passing through the minds of some of us at this moment.

There is the constant cry, I know, which is going up that the pupils' minds are being overloaded and overtaxed with what is already being taught in our schools, much of it, it is urged, of doubtful value and service; and we all remember the controversy which was recently waged in New York city, echoes of which are not inaudible in this city, against "the frills and fads of education." Now I am as hearty a believer as anyone in instruction for purely cultural as well as for practical purposes, but I believe that, if there is any danger of putting too much of a burden upon the minds of our boys and girls at school, there are other branches of instruction that could far more wisely and advantageously be dispensed with in our schools, than instruction in morals. If our teachers of the classics and higher mathematics will forgive me, these studies, to my mind, could very safely be set aside, to give place to the much more essential study of right relations between human being and human being.

Then there is that conservative sense which is so disposed to protest over this as over every other proposed innovation: "We have gotten along very well all these years," says this conservative sense, "without ethical teaching in our schools. We developed fairly good citizens, tho such teaching was not a part of their school instruction. What is the need then of introducing it now?" "True," let me venture to say in reply, "we did get along quite well in the past, and there is no ground for apprehending that we shall not get along just as well in the future; but is this any reason why we should not desire, and make the endeavor to get along even better, to develop an even finer type of citizenship now than in the past?" Further, let it be observed, that life in the present, under modern conditions, is steadily, daily, becoming more stressful, more complex; that the difficulties, the temptations which face men are greater, and require clearer discernment of moral distinctions, and a heavier draft upon their powers of self command and self control, now than in earlier times. Shall we not then prepare our youth in our schools, where they come day after day for instruction, so that they can with a proper sense of duty and an adequate equipment for their faithful discharge, meet these heavier exactions of our modern life?

And then there is that further and most powerful objection, the objection against the possible sectarianization of our schools. "Ethics, morals should by all means be taught to our boys and girls, but the proper place for such teaching," the voice of objection as I catch it here urges, "is in our Sabbath, our Religious schools, or our homes, but never in our public schools." Now, let me say, that I yield to no one, and no one can be more zealous than I for the preservation, free from the least taint of sectarianism, of the strictly secular character of our pub-

lic schools. The public schools belong not to any one part of our people, however, strong or influential numerically or otherwise they may be, but to the whole people; and I should fight till the last particle of my breath and strength were spent any attempt to intrude into our public system of education any item of instruction that could give offense in the least way to the scruples in the matter of religious belief, or for that matter non-religious unbelief, of even the slightest minority of those who contribute by their taxes to the support of our schools. As far as our school policies are concerned, where any item of sectarian belief may be involved, it is my conviction, that the minority, whoever and whatever they may be, have rights, which are just as sacred, just as much to be considered and respected as those of any majority. I cannot say then too strongly or too emphatically, that I stand unalterably and unqualifiedly opposed to all denominationalism; that I want no one's religion, neither mine, nor anyone else's under whatever guise, taught in our public schools.

But saying this as decidedly as I do, I can say equally as decidedly at the same time, that I cannot see where this principle of non-sectarianism, non-ecclesiasticism, need to be in the least imperiled by the introduction of ethical teaching in our schools. Morals can be taught entirely independent of religion, or anyone's religious bias. Whatever be our theory of the ultimate sanctions of ethical precepts; whether we believe that they are divinely derived and ordained or not; whether we hold with the empiricists or the intuitionists, the evolutionists, the utilitarians, or the transcendentalists in their varied opinions as to what imposes authority in moral action;—all this is aside from the question at issue here. To whomsoever, or to whatsoever, for their final determination, we may trace back the distinctions between right and wrong, the fact nevertheless remains that there is a large fund of ethical judgments which we all hold in common, a whole host of things, upon which we have all come to agree, as the right, the true, the good, the benevolent things for us to do in certain circumstances and relationships, would we call ourselves moral beings. And these things I hold, teachers in our public schools can teach, wholly apart from any belief and any theory they may have as to whence mankind has come into the knowledge of them, and whence it has derived the authority for doing them. And I, for one, have every faith and confidence in the broad-mindedness and tolerance of spirit of the teachers in our public schools, that, respecting all possible differences of opinion and belief represented in the pupils who sit before them, they would teach morals in just this way;—carefully putting from them all sectarian prepossessions, and scrupulously avoiding coloring their teachings by any bias they may have, toward or against any particular mode of belief. And for such

teachings, I further hold, that it is entirely feasible and practical to compile the appropriate and satisfactory text books. There is a whole rich treasure-house of ethical aphorisms and parables contained in the literature of all ages and all peoples, Pagan, Moslem, Buddhist, Confucian, Jewish, Christian and infidel. It is entirely possible, entrusting this task to a commission of competent authorities, in whom complete confidence can be reposed, to collate the ethical teachings on which the universal enlightened moral sense of mankind is a unit, and incorporate these in a work, wholly irrespective of the source whence derived, attaching no name to them,—nothing to indicate to a possible sectarian prepossession one way or the other, whether they are the teachings of a Confucius, or a Buddha, a Plato or a Seneca, a Marcus Aurelius or an Epictetus, a Moses or a Jesus, a Hillel or a Thomas a Kempis, a Robert Ingersoll, a Felix Adler, a Phillip Brooks or a Henry Ward Beecher; the only test to be applied being the ideality of the thought, and the nobility of the literary expression.

Let us then have this ethical teaching in our schools! We need it for the proper development and promotion of the best efficiency of the pupil. We need it for the turning out of the most useful type of men. We need it in particular in these days when moral distinctions are so frequently obscured, and men in the hot frenzied pursuit after success so often forget the debt and duty of the social trusts and the social stewardships they hold in keeping.

THE BESETMENTS OF THE SCHOOLMASTER.

Carroll G. Pearse, Milwaukee.

I might perhaps have used a stronger word and said "Some Temptations of the Schoolmaster," those things which come to every one who follows the profession and unless he is on his guard and resolutely resists them, are likely one or another or perhaps all of them to put their mark upon him.

The schoolmaster is not peculiar in having these besetments; they go with all employments and unless the workers in these employments are on their guard, these influences mark them for their own. Some of these besetments relate to the physical man and determine the carriage, the attitude in standing and sitting, the walk, or poise of the head; others have to do with the outlook on life, with the way one man meets his fellow man, the attitude which he assumes toward them, his habits of thought and methods of reasoning, and other characteristics which go to make up character.

The cowboy who lives upon horseback acquires a red-brown complexion and probably a fine pair of bow legs. The shoemaker who stoops over his last day after day will not be erect of figure; the sailor rolls in his gait; the farm laborer who plods over soft ground on so many days of the year acquires the gait which marks his kind. The minister must be on his guard in order that he may not acquire a professional aspect of benevolence and piety; the lawyer, lest his mind becomes habituated to an attitude of distrust and quibbling and suspicion which usually go with him into all undertakings and investigations, and so the schoolmaster by virtue of his surroundings and the position he occupies in the community, the manner in which he gets his employment, the people with whom he has habitually to deal, must be on his guard to keep a well-balanced character unmarred by the foibles which his employment has a tendency to develop.

The author of the *Deserted Village*, in describing the village school and its master said:

"Full well they laughed, with counterfeited glee,
At all his jokes, for many a joke had he.
Full well the busy whisper, circling round,
Conveyed the dismal tidings when he frowned."

And the schoolmaster today has much of the temptation which caused the schoolmaster of Goldsmith's day to develop into the petty wit. It is so easy for a teacher to raise a laugh in his school by some time worn joke or by some bit of satire at the expense of an awkward pupil or some boy who has made a blunder in his lesson. The youngsters are so accustomed to hang upon the mood of the teacher and to laugh when they think he would like to have them laugh, to look sober if he may wish them to look sober, that it requires more self-restraint than the average schoolmaster has, to avoid falling more or less into this petty habit. It is so easy for the schoolmaster of wider responsibilities and more exalted position to bring a laugh from a complaisant company of teachers who tend to hang upon his humor and to laugh at his jokes even when the joke is at the expense of someone who is hurt by it. All of us who have stood at the schoolmaster's desk have felt these temptations, but I believe none of us has ever yielded to the impulse without thinking, if he thought honestly of the matter afterwards, that he had cheapened the standing of his profession by yielding.

The schoolmaster sits in the seat of authority. His word is law; the pupils are not permitted to talk back to him, and if he be a principal or superintendent, the teachers do not have that privilege when he gives his dictum upon school matters. They must receive his sentence. As pupils come before him, he is counsel, judge and jury. These conditions are not unlikely to beget in him an unjudicial temper,—a tendency to decide hastily; and hasty decisions are certain to lead, on numerous occasions, to injustice. Often a boy comes to the teacher; he wishes to state his case, to present his defense. But the teacher thinks he knows all about it; the boy is not heard; sentence is passed; the criminal is executed. Sometimes the execution is deserved; quite as often a statement of the case from the boy's point of view would have secured a modification of sentence. Principals are less inclined to deal thus summarily with teachers, but frequently the temptation to deny a hearing to the parents of pupils is felt and yielded to. The principal thinks he knows the facts,—he does not care to make any inquiry as to causes or reasons; the dignity of the school has been outraged, his own rules have been violated, and the edict promptly goes forth. Later inquiry not seldom develops the fact that this edict is based upon partial information; that extenuating circumstances exist; that the pupil had provocation, perhaps not enough to excuse him but enough to mitigate his offense. Word sent may not have reached the parent, or it may have been impossible or exceedingly inconvenient for the parent to comply with the instructions transmitted to him. A man who sits year by year in a position where he has the

opportunity to pass summary judgment and whose judgments are seldom questioned must be ever on his guard to avoid this tendency to become the unjust judge.

The teacher has chosen a peculiar employment. It has many pleasant features; it has peculiar opportunities which bring peculiar responsibilities. A man may be a woodchopper and his duty does not call him to exercise forbearance or insight or lay upon him special duties toward his fellow men. He may be a banker and his duties are to his bank rather than to the unfortunate would-be borrower. He may be a civil engineer and his dealings are largely with material things rather than with persons; but the schoolmaster has chosen a vocation in which it is his prime duty to influence, to draw out, to train the young people who are in his charge towards better things,—a fuller life,—the most efficient manhood and womanhood. If he does not wish to maintain this attitude, if he does not have, or lacking it in the first instance, if he is not willing to acquire as his habitual attitude, an earnest desire to instruct, to benefit, to help those with whom he deals and for whom he works, he should leave the profession and become a farmer or a logger or a manufacturer of boots and shoes or enter some employment which does not make this demand upon his altruism. And very many times the teacher fails to live up to his opportunities for good to those whom he teaches, either because he does not see or seeing does not respond to the opportunities which his employment brings.

The schoolmaster has another temptation which, while it concerns his work as well, concerns chiefly himself personally. He is engaged in work with people whose minds are less mature, whose characters are less developed, whose wills are not so strong as his own. It is comparatively easy for him to shine in the presence of his class, he knows far more than they, he can, without special effort, instruct them in knowledge beyond the scope of their daily lessons. It is in the heart of man to love leadership, to love to pose in an attitude of superiority; and the schoolmaster is tempted to be content with this easy glory and to neglect his opportunity and the duty to continue his intellectual growth. The temptation to pose as leader and teacher is so easily gratified that he must be on his guard against intellectual sloth. Every teacher who would keep himself in the best tone personally and in the best tune for his work must be a student. He must not lose the habit of study. Just as the man to keep a healthy body must keep, as we say, "in training" in order that his muscles may not become flabby and his vital processes ineffectual, so the teacher to keep in proper "training" must not lose this habit of study, this habit of intellectual exercise. The habit is necessary in order that he may maintain unimpaired his intellectual strength.

The next besetment is allied to the one just referred to. A tendency on the part of the schoolmaster to overestimate himself. He deals with children who are his inferiors in age and knowledge. If he is the manager of a school system he deals largely with women and with younger men who are his inferiors in authority and to whom, when there is a difference of opinion, he may give direction. He lacks the opportunity to stand face to face with men of his own station and quality as the lawyer may stand, in the court room in the presence of the judge, to present his case, knowing full well that his antagonist upon the other side will search out every weak spot in his argument and show up every lack in his testimony. The schoolmaster to correct this tendency needs to mingle with men; he needs to seek the company of other men outside of the hours of his labors, not of a few men, not of picked men whose tastes are similar to his own, or men who defer to him because he is the schoolmaster, but the society of men to whom he is not the schoolmaster, just another man. For this reason it is well that he should be active not only in the work of the church of his choice, but in other lines of interest in the community, that he should ally himself with fraternal organization where he may meet other men upon a level and associate with them as one of the company and not from a position of vantage. He needs to go hunting and fishing with men, to meet in society both men and women to whom he stands or falls merely as man, upon his acceptability as an associate and companion. And if he will do this, he will find his little bubble of inflated self-esteem pricked quite frequently, to the great good of his soul.

The work of the schoolmaster has in it, even today, a little of the old attitude in which he stood toward his employer. Many times the community makes the schoolmaster feel that he is held as its servant. The way in which schoolmasters are sometimes selected and the facility with which they may sometimes be dismissed, have a tendency to quell the manly courage in a man and bring to the surface that quality which we sometimes call cowardice. The tendency to quail when assailed in the discharge of official duty, by influential persons, to abdicate the high quality of independent manhood which every teacher should feel to be his birthright,—to fail in a pinch to stand manfully for what is right in the conduct of his school, the temptation to defend weakly or ineffectively the teacher in his school who is trying bravely to meet and rightly to deal with disorder or prejudice or malice. The schoolmaster needs to take counsel frequently of his courage,—not of his rashness, not of his obstinacy, not of the gratification of his anger,—but of his high courage, to meet with undaunted front the attacks which will be made upon him from time to time so long as he continues in the work.

And last I mention a quality which the work of the schoolmaster has some tendency to develop. He serves the whole community, Jew, Gentile, Catholic and Protestant, Democrat, Republican and Socialist. He is by his position barred from taking sides offensively in public movements, from becoming actively engaged in political warfare; but there is nothing in the work of the schoolmaster which rightfully prevents him from having, and in a proper manner and upon proper occasion, maintaining and advocating his view religious, economic or politic; and that schoolmaster is not living up to the high requirements of his calling who permits the fear of offending some person or some party or some faction, to develop in him what for lack of a better name, we might call foxiness. The habit of hiding his real views, of secreting the attitude of his mind on questions of a public nature or of a general public interest. The temptation to do this, to avoid giving offense by concealing from everyone his views and convictions presses always upon the schoolmaster; but who would not wish for the teacher of his child a man of courage and conviction. And if a man has convictions and a manly courage, he will not hesitate in the proper way and in the proper time to state his convictions and to let that for which he stands be known. I believe that schoolmaster who follows the policy of concealing opinions which may be properly entertained,—of omitting to avoid antagonism by assuming the attitude of the sphinx,—sacrifices in the loss of confidence and of that respect which we all feel for firmness and courage more than is gained through avoidance of antagonism which would be created by permitting his attitude to be known. I believe if we look about at those schoolmasters whom we most respect, those from whom we have received the greatest benefit, those who are best fulfilling and doing the work of their calling, we shall find they are not those who have developed this quality of secreting their sentiments or of hiding their proper opinions but those who are on proper occasions outspoken and courageous and fearless.

FOOD ADULTERATION.

J. Q. Emery, Madison.

The title of this address should have been "A Few Glimpses into the Great Field of Food Adulteration," for that is all that I can give in the time allotted, and it must have been when I was in a state of great optimism that I consented to make the undertaking in the time at my disposal.

In an address before the National Association of State Dairy and Food Departments, Professor J. H. Shepherd, chemist for the Dairy and Food Commission of South Dakota, and professor of Chemistry in the South Dakota College of Agriculture, presented the following as a menu for one day that he said any family in the United States might possibly use. His purpose was to show the extent to which chemical preservatives and artificial coloring are used in foods. With a few variations I give the menu as prepared by Professor Shepherd:

Breakfast—

Breakfast food and coffee.

Sausage—containing coal tar dye and borax.

Potatoes.

Baker's bread—containing alum.

Artificially colored oleomargarine—containing coal tar dye.

Canned cherries—containing coal tar dye and salicylic acid.

Pancakes—containing alum.

Syrup—containing sodium sulphite.

This gives eight doses of chemicals and dyes for breakfast.

Dinner:—

Tomato soup—containing coal tar dye and benzoic acid.

Canned beef—containing borax.

Corn scallops—containing sulphurous acid and formaldehyde.

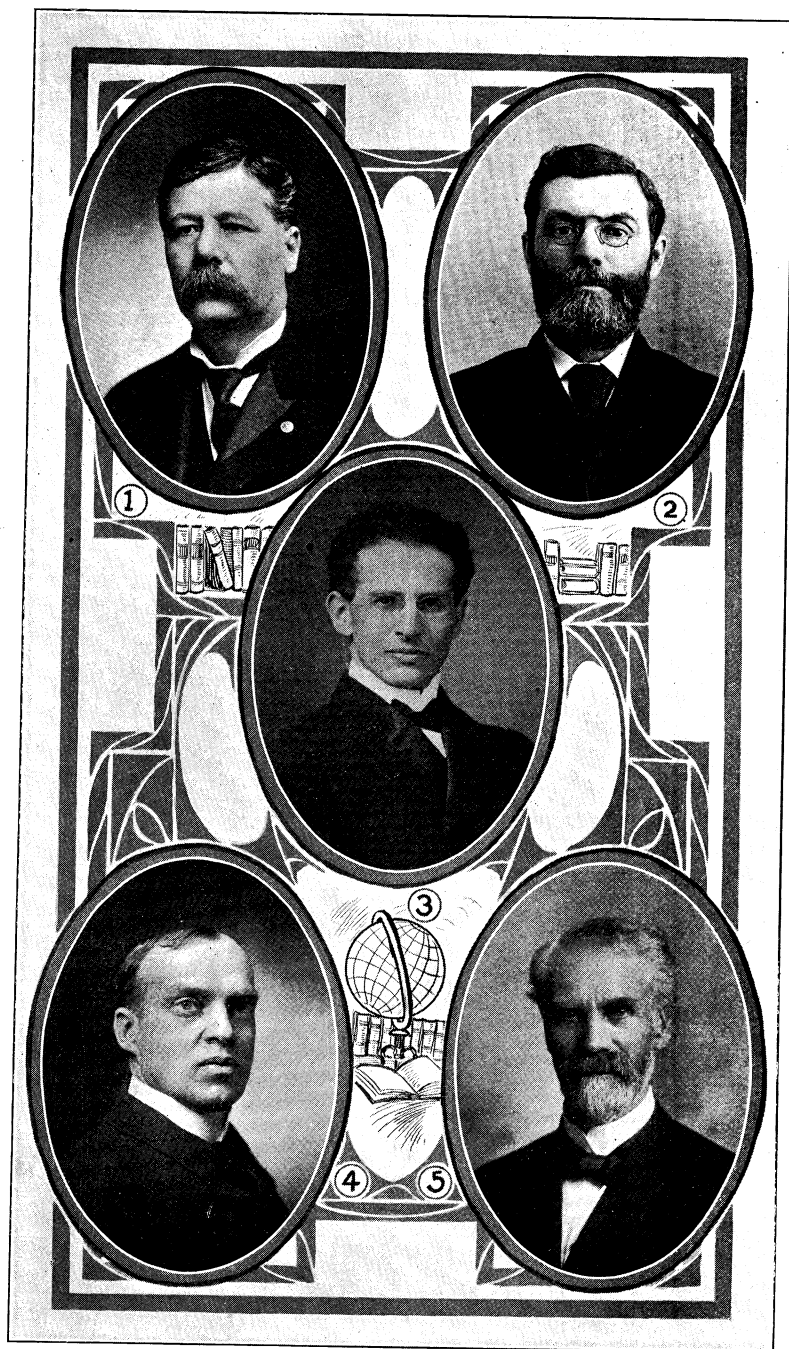
Canned peas—salicylic acid.

Catsup—coal tar dye and benzoic acid.

Potatoes.

Cod fish—containing borax.

Bread and artificially colored oleomargarine, alum and coal tar dye.



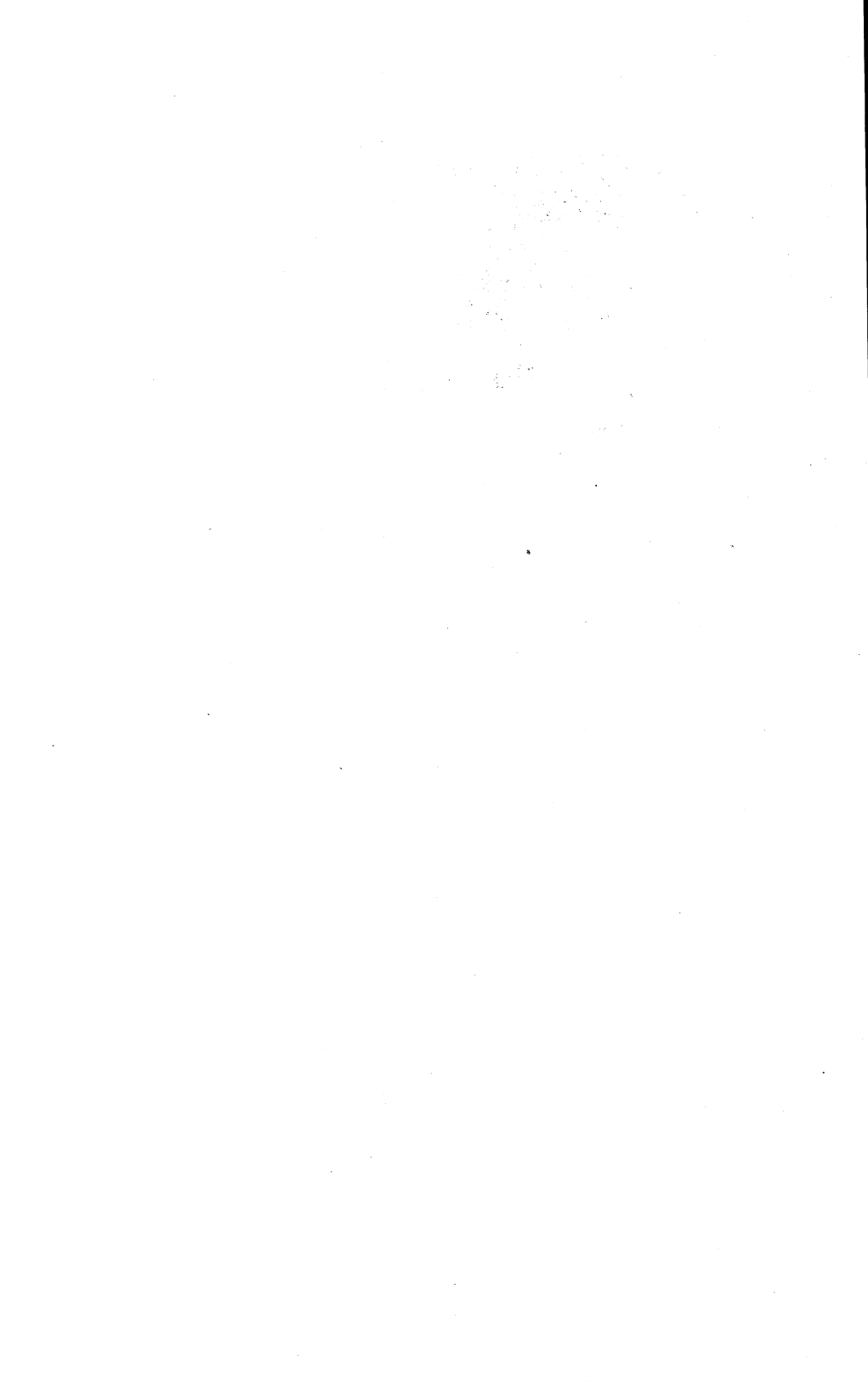
1. HON. ALFRED K. BAYLISS.

2. JOHN KENNEDY.

3. RABBI SAMUEL HIRSCHBERG.

4. AMOS P. WILDER.

5. J. Q. EMERY.



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Mince pie—boracic acid.
Pickles—copperas, sodium sulphite and salicylic acid.
Lemon ice cream—methyl alcohol.
Coffee.

This menu gives sixteen doses for dinner.

Supper:—

Baker's bread and artificially colored oleomargarine containing alum and coal tar dye.
Potatoes.
Hamburger steak—containing sodium sulphite and coal tar dye.
Canned Peaches—sodium sulphite, coal tar dye and salicylic acid.
Pickles—copperas, sodium sulphite and formaldehyde.
Catsup—coal tar dye and benzoic acid.
Lemon cake—alum.
Baked pork and beans—formaldehyde.
Vinegar—coal tar dye.
Currant jelly—coal tar dye and salicylic acid.

This menu gives sixteen doses for supper. According to this menu then, the unconscious and unwilling patient gets forty doses of chemicals and colors per day. Even if he should introduce quite a variation, he would be as likely to increase the dosage as he would be to diminish it. During a year he would unconsciously take fourteen thousand six hundred doses.

Broadly speaking, food adulteration is either deleterious, consisting of an addition to a food product of a deleterious substance not natural to that food; or second, a commercial fraud, consisting of the abstraction of any valuable constituent from a food product, or the misbranding of food products. All food adulterations take money from the public's pocket. Deleterious food adulteration takes away health also.

The food laws of this country were borrowed from England. New York, Massachusetts, Pennsylvania and Ohio were the states first to enact food laws. The essential features of the general law of Wisconsin defining the adulteration of food, were borrowed from those states. That law was first enacted in 1897 and as amended by the legislatures of 1903 and 1905 is as follows: It forbids the sale of adulterated foods, under a penalty of twenty-five to one hundred dollars or imprisonment in the county jail not less than thirty days or more than four months. The term "food" includes all articles used for food or drink or condiment by man, whether simple, mixed or compound.

An article is deemed adulterated in the case of food: if any substance or substances have been mixed with it, so as to lower or depreciate or injuriously affect its strength, quality or purity; if any inferior or cheaper substance or substances have been substituted wholly or in part for it; if any valuable or necessary ingredient has been wholly or in part abstracted from it; if it is an imitation of, or sold under the name of another article; 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; 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; 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 articles of food which are labeled, branded or tagged in a manner showing their exact character and composition and approved by the dairy and food commissioner of the state, and not containing any poisonous or deleterious ingredient shall not be deemed adulterated in the case of mixtures or compounds sold under their own distinct names or under coined names and which articles, if substitutes, are not in imitation of, or sold under, the name of any other article of food.

Besides the general law on the adulteration of foods we have specific laws relating to adulterated milk or adulterated cream; cleanliness in creameries, cheese factories and places where milk is produced or manufactured into food products; oleomargarine; renovated butter; canned goods; vinegar; prohibiting the use of artificial coloring and antiseptics in chopped meats and sausages; relating to chemical preservatives in foods, relating to maple syrup and maple sugar, glucose mixtures; buckwheat flour; condensed milk and evaporated cream; lemon extract and vanilla extract, and others.

The figures indicating the estimates of the extent of food adulteration in this country are somewhat appalling. F. N. Barrett, editor of the American Grocer estimates that the people of the United States consume \$8,000,000,000 worth of food and drink each year. He estimates that 2 per cent of that amount, or \$160,000,000 is paid yearly for adulterated foods. Dr. Wiley, chief chemist of the United States Department of Agriculture, estimates that 5 per cent of all foods consumed in this country is adulterated. If that estimate is correct, and it is believed to be a conservative estimate, then the annual cost of the people of this country for adulterated food products is \$400,000,000.

That does not mean that there is no value whatsoever in many of these adulterated foods. But the price for which they are sold is

greatly in excess of their actual value and the price they would bring if sold in the market for what they actually are. Immense fortunes have been built up by the difference.

On the character of food adulteration, I prefer to offer you the conclusions and statements of expert chemists who are experienced in the work of analyzing adulterated foods.

Dr. Richard Fischer, chemist for the Wisconsin Dairy and Food Commission, commonly called the state chemist, who is a graduate from the School of Pharmacy and College of Letters and Science of the University of Michigan, and who received the degree of Ph. D. from the University of Marbourg, Germany, after three years of study at the Universities of Berlin and Marbourg, and who has had ten years' experience in teaching chemistry in the Universities of Michigan and Wisconsin, makes the following report from his experience in the laboratory of the Dairy and Food Commission in analyzing foods suspected of adulteration that were taken from the Wisconsin markets:

Baking Powder: Containing alum, and deficient in available carbonic acid and therefore leavening power.

Buckwheat Flour: Low grade wheat, rye and corn flour. Also gypsum.

Butter: Oleomargarine and renovated butter sold for dairy and creamery butter. Butter containing 50 per cent of water.

Chocolate and Cocoa: Containing starch and oxide of iron.

Candies: Paraffin and clay.

Catsup: Artificial color, chemical preservatives, tomato refuse (skin and seed).

Cheese: Skim-milk cheese sold for whole milk cheese. Whole milk cheese sold for cream cheese.

Apple Cider: Adulterated by addition of preservatives (salicylic acid and hydrofluoric acid). Often diluted with water or with sugar water. Sometimes contains no apple juice but is made from sugar, water, tartaric acid, artificial flavor and coal tar dye.

Raspberry and Orange Cider and Rootbeer: Made from sugar, water, tartaric acid, saccharine, salicylic acid and coal tar dyes.

Soda Waters: Often contain saccharin, salicylic acid, coal tar dye.

Cream: Boric acid, formaldehyde, gelatine, artificial coloring matter, deficiency in fat.

Evaporated and Condensed Cream: Containing only 7.9 per cent milk fat.

Cream of Tartar: Composed of calcium acid phosphate, calcium sulphate, alum and starch.

Grape Juice: Sugar water, tartaric acid and coal tar dye.

Currant Strawberry and Raspberry Jellies: Made from apple pom-

ace, starch paste, gelatine, glucose, artificial flavor, tartaric acid and coal tar dye.

Jams and Preserves: Made from under ripe or decayed fruit, from fruit refuse, apple pomace, glucose and coal tar dye.

Lard: Cottonseed oil and beef stearine, beef tallow.

Lemon Extract: Wood alcohol, terpinless lemon oil, robbed oil of lemon, oil of lemon grass.

Vanilla Extract: Wood alcohol, vanillin, coumarin, prime juice, caramel, coal tar dye.

Cider Vinegar: Spirit vinegar with artificial coloring matter, sugar, glucose or apple pomace.

Malt Vinegar: Spirit vinegar with artificial coloring matter, sugar or glucose.

Wine Vinegar: Spirit vinegar.

Spirit Vinegar: Pyroligneous acid.

Maple Syrup: Mixed with glucose, cane syrup or sorghum, or made entirely from sugar and a decoction of maple wood, hickory wood or corn cobs.

Maple Sugar: Made by the evaporation of the above.

Meats, Chopped Meats and Sausages: Colored with coal tar dye and preserved with sulphites and boric acid or borax.

Milk: Formaldehyde, boric acid, borax, added water, skimming artificial color.

Molasses: Glucose, poisonous salts introduced in the refining of sugar.

Sorghum: Glucose.

Syrup: Glucose.

Olive Oil: Cottonseed oil and peanut oil.

Pepper: Pepper dust, pepper hulls, cocoonut shells, olive pits, roasted cereals.

Cayenne Pepper: Oxide of iron.

Wine: Sugar, water, tartaric acid, tannin, coal tar dye.

Dr. H. W. Wiley, for many years chief chemist of the United States Department of Agriculture, Washington, D. C., and who has been specially charged with conducting investigations relative to the adulteration of foods, under the authority of the United States government, has published the following:

What may a housewife expect who goes into a store where no food regulations, national, state or municipal, exist? If she asks for butter she may get oleomargarine or renovated butter; for honey, glucose or a mixture thereof; for pepper, an article adulterated by the addition of starch and ground shells; for jelly, some fruit juice usually derived from apple cores and skins rejected in drying, mixed with glucose,

preserved with salicylic acid and colored with some sort of aniline dye. The peas or beans may contain, especially if they are very green,—considerable quantities of that poisonous substance, sulphate of copper; the prepared meat or sausage, boric acid and usually some coloring matter to intensify the real color of the meat; the codfish may be preserved with boric acid instead of old-fashioned common salt; the sardines, purporting to be of French origin, may have been caught off the coast of Maine, and instead of being packed in olive oil, as one would expect, are often packed in cottonseed oil. She may get tub oysters highly dosed with borax; milk and cream containing formaldehyde; maple molasses made of glucose and melted brown sugar; olive oil that is wholly cottonseed oil or mixed with cottonseed, peanut or sesame oil; white wine almost saturated with sulphurous acid; red wine made partly of sugar and not wholly of the juice of the grape; Mocha and Java coffee from Brazil yet bearing the false name; cream made of milk thickened with viscogen and artificially colored; and so on down the list.

The three most troublesome mischief makers in food adulteration are artificial coloring, chemical preservatives or antiseptics and misbranding.

It is not to be understood that the intrinsic deleterious character of artificial coloring in food is the only or even the worst feature in the use of such artificial coloring. It may conceal from the purchasers or consumer the inferior or unwholesome character of the constituents of foods. Its use makes possible innumerable commercial frauds.

Already many of our best manufacturers of foods have completely abandoned the use of artificial coloring. Take the case of catsup. A few years ago, it was the custom of all or very nearly all the manufacturers to use artificial coloring in catsup, claiming that it became necessary to use artificial coloring to restore the natural color of the fruit that had been partially lost in the process of cooking. Now, however, reliable manufacturers of catsup seem to vie with each other in making assurances that their catsup is not artificially colored.

A statute, passed by the last legislature, that will go into effect January 1, 1906, forbids the manufacture and sale for use and consumption in this state of foods containing such chemical preservatives as formaldehyde, sulphurous acid or sulphites, boric acid or borates, salicylic acid or salicylates, saccharin and other preservatives injurious to health. If still other preservatives other than common salt, wood smoke, sugar, vinegar, condimental preservatives, etc., are used, their presence must be disclosed to the purchaser.

That boric acid and borates are intrinsically deleterious was conclusively proven by Dr. Wiley in elaborate, scientific experiments con-

ducted by authority of the United States Government. Dr. Wiley's conclusion, briefly stated, was as follows: It appears, therefore, that both boric acid and borax, when continuously administered in small doses for a long period or when given in large quantities for a short period, create disturbances of appetite, of digestion and health.

Similar experiments have been conducted by Dr. Wiley with salicylic acid, sulphurous acid, benzoic acid and formaldehyde. Dr. Wiley has publicly stated that while all the chemical data in regard to these experiments have not as yet been tabulated and studied, it is evident that the bodies above named certainly cannot be regarded as healthful. He further states that there can be no excuse for the addition of such bodies to food unless some positive benefit is derived. For it is well known that food can be preserved without those chemical antiseptics either by desiccation, by sterilization, by pickling in brine or by subjection to the joint action of salt and wood smoke.

But notwithstanding their deleterious character, intrinsically, their use is highly objectionable for other reasons. By their use, foods that otherwise would be rejected as unfit for human consumption, can be and are palmed off on the unsuspecting public. Let me give a few illustrations. Take the case of sodium sulphite in meat. When sulphites are introduced into the stomach, the hydrochloric acid of the gastric juice liberates sulphurous acid. This sulphurous acid is undoubtedly deleterious to health. But the following indicates a still more objectionable feature to the use of sulphites in preserving meats. Sulphites act as deodorizing agents and at the same time produce a bright red color, and have only a comparatively slight antiseptic action. In consequence, meat to which sulphites have been added, may decompose with the formation of poisonous ptomaines and still have the appearance of fresh meat. Decomposition in meats in which sulphites are present cannot be recognized by the senses of sight and smell upon which the ordinary purchaser is dependent for the recognition of tainted meats.

Let me recount to you some of the vile uses to which some of these chemical preservatives are put. Here is a half gallon bottle. It is labeled "Freeze-em." The letters with which the word is spelled are trimmed with representations of ice. This is called "The Great Preservative," and is prepared and sold by "B. Heller & Company, Manufacturing Chemists, Chicago, U. S. A."

This was obtained from a butcher in a Wisconsin city after he had been prosecuted and fined for selling meats containing chemical preservatives and artificial coloring. That prosecution and fine gave him such an accumulation of experience and wisdom on the use of of chemical preservatives in meat, that he declared he no longer had any use for this "Great Preservative."

This product which the manufacturers claim to have discovered as the result of a series of lengthy and costly experiments, is found upon analysis by Dr. Fischer, state chemist, to consist of sodium sulphite and a little coal tar dye. The great loss of gray matter in making such a wonderful discovery must have left the discoverers in a very depleted condition.

Following is a list of the various kinds of meat named upon the label upon which this "Great Preservative" is recommended for use: Chopped Beef or Hamburger Steak, Pork Sausage, Ribs and Loins, Small Rib Roasts, Chuck Roasts and Rumps, Steaks, Chops, Cut Pieces of Meat, Tenderloin, Pork Loins, Spare Ribs, Pork Tenderloins, Trim-mings, Fresh Hams, Poultry, Brains and Sweet Breads, Head Cheese and Liver Sausage, to prevent skippers and slime on Dressed Beef, Mutton and Veal, Fresh Tripe, Fresh Pigs' Feet and Tongues, Fish, Oysters, Livers, Bologna and Frankfort Sausages.

It is claimed this "Great Preservative" is used almost universally by butchers, and it is fair to presume that it is used for the purpose for which it is bought and recommended.

What housewife think you would take tainted meat, poultry or fish and wash and treat it with some deleterious chemical, and then serve it to her family as fresh meat, fresh poultry or fresh fish. Yet here is a peril which menaces the American consuming public. I repeat that the vile uses to which chemical preservatives are put constitute a greater menace to the consuming public than does the intrinsically deleterious character of the preservatives themselves.

Former state dairy and food commissioner of Minnesota, Hon. W. W. P. McConnell, is responsible for the following statements relative to the use of chemical preservatives in meats:

In a trial held in Minneapolis, Minn., a butcher who had had thirty years' experience and who was then foreman of one of the largest retail markets in the state, testified as follows:

To the question of "How much was ordinarily used to a given quantity of meats?" the answer was "We never measure it; we always have a paper box and sprinkle it all over the meats and then turn them over and put on more until we kill the smell and it restores the color, the amount used depending entirely on the degree of putridity and scent to be overcome." To the question "In the preparation of chopped meats, do you use meats that smell badly?" the answer was, "Oh, yes; we use such meats that cannot be sold unless so prepared."

Let me now refer to the effect of the uses of chemical preservatives in food of a different kind, namely, *milk*. Considering that milk is one of the most important foods for invalids and almost the exclusive food for infants, it is practically the unanimous opinion of experts

that no preservatives of any kind should ever be used in milk. It is plainly established beyond question that cleanliness and cold are the only agents necessary for the care and preservation of milk that is to be kept for ordinary periods of time. If it is necessary that milk be kept for a considerable length of time, that can be accomplished without the use of chemical preservatives, by means of pasteurization or heat sterilization. When milk is kept in its normal condition without the use of preservatives, growth of the lactic acid bacteria, which are always present in normal milk, retards the development of putrefactive organisms which may be present. Experiments have demonstrated that the preservatives commonly used for preserving milk, especially formaldehyde, while destroying the lactic acid bacteria, have little or no effect upon the growth of putrefactive organisms. Milk therefore, to which such chemical preservatives have been added, may appear fresh and sweet, although containing large numbers of deleterious bacteria, together with ptomaines produced thereby.

If normal milk is no longer fresh, its appearance conveys that fact to the consumer by being sour or curdled. While no mother would think for a moment of feeding sour or curdled milk to an infant, the use of preservatives in milk renders possible the feeding of milk in much worse condition, because the danger signal has been removed by the use of preservatives, and all this is true, aside from the intrinsically deleterious effect of the preservatives themselves.

A label on a food product, like a witness under oath on the witness stand, should tell the truth, the whole truth and nothing but the truth. Measured by this standard, many labels on food products fall far below such standard of duty. The doctrine declared by the United States supreme court is "that labeling must be so plain that ordinary purchasers buying with ordinary caution, will not be misled." (96 U. S., 245.)

Under a label indicating pure Louisiana Molasses, a mixture consisting of only 40 per cent of Louisiana Molasses and 60 per cent of glucose has been sold. Under a label, marked Sorghum, a mixture of only 40 per cent sorghum and 60 per cent glucose has been sold. See in our exhibit a sample of so called pure Honey, sold in Wisconsin as such, consisting of 80 per cent glucose and only 20 per cent honey. Under a special law enacted last winter, such practices will be prevented.

The scope of the Dairy and Food Commissioner's work is indicated by stating that there are in the state, more than 6,000 groceries and general stores where foods are sold, 2,000 meat markets, 2,800 cheese factories and creameries, 900 drug stores, 500 mills, not to mention the number of places where drink in the form of beverages is dispensed.

To the extent that the commissioner suspects the adulteration of foods or drink in any of these places; to that extent at least, does the law call for inspection.

The commissioner under authority of law issues fifteen thousand quarterly or semi-annual bulletins, containing results of inspections, results of analyses, made by the chemist, and such other information as may come to him in his official capacity, relating to the adulteration of food, drug and drink products and of dairy products. They are distributed among the cheese factories, creameries, groceries, meat markets, mills, daily newspapers, and to all others interested. The purpose is to give publicity to unlawful adulterations. It is educational in that it guards against unlawful products, by furnishing means of knowing the true character of such products.

In this work, as in most other things, there is the spirit which permeates and actuates as well as the law that determines. It is the desire and purpose of the commission to be helpful to all producers and dealers in efforts to furnish the consuming public, pure, unadulterated foods. It also desires to aid the consuming public in safeguarding its interests.

In one of Mrs. Abel's sane and instructive articles on food adulteration, current in the *Delineator*, she states what is most emphatically true, that "Among the many discordant voices, there is the one clear note, the buyer must be educated to know what he is buying."

This great problem of food adulteration is before the American people and must be solved. That it will ultimately be solved and solved right, my confidence in the American people does not allow me to doubt.

NOTE.—President Charles Kremer of the Wisconsin Association of Master Bakers has asked that it be explained in connection with this paper that Mr. Emery (in reply to a letter from him) stated that his reference to baker's bread containing alum was based upon a possible menu prepared by Prof. J. H. Shepherd, chemist for the Dairy and Food Commission, South Dakota, and further that his department had made no analyses of cooked foods.

Appended is a report from the Agricultural Department at Washington.

UNITED STATES DEPARTMENT OF AGRICULTURE,
BUREAU OF CHEMISTRY,
WASHINGTON, D. C., Jan. 12, 1906.

MR. H. R. CLISSOLD, Chicago, Ill.

DEAR SIR: Your letter of the 9th inst is at hand. There seems to be little doubt but that alum was used to a considerable extent in baking

bread about the middle of the last century. At least it was reported by chemists whose work does not seem to be open to question.

The only investigation we have made of this subject was in the preparation of Part 9 of our Bulletin 13. All of the breads reported in that bulletin were tested for alum with negative results. I am not aware that alum has been reported in bread sold in the United States during recent years.

Respectfully,

H. W. WILEY,

Chief.

"TEACHERS' PENSIONS—MORE A HARM THAN A BENEFIT."

G. H. LANDGRAF, Marinette.

Every calling leaves a lasting impress on the mind and character of its votaries. Occupations that require broad sympathies and abilities, that deal with large problems in a large way, add immeasurably to the mental stature of their practitioners and increase their usefulness in their chosen work and as members of society. It is frequently asserted of teaching that it tends to narrow men and women, to reduce them to machines doing a particular work in a cut and dried way. That it is not broad nor broadening in its effects and unfits teachers for the larger function of citizenship and general usefulness. We do not concur in this pessimistic view of our work yet because men in business and professional life take it, it behooves us to do all in our power to raise teaching to the true dignity of a profession which shall be as broadening and developing as other callings.

We should be cautious in introducing innovations that may prove far more harmful than beneficial. Before committing ourselves to a policy of pensioning teachers, we should be certain that teachers themselves want it. We should consider its practicability and impracticability. We should know what its effect on salaries is likely to be. We should ask ourselves if pensions will make teaching more or less attractive to men and women seeking a life work, whether they will improve the social and professional standing of teachers and whether such a policy would be in harmony with American ideals.

No revolutionary change in any institution should be made until there is an unmistakable and general demand for it. It requires no elaborate argument to prove that the great body of American teachers have not demanded pensions and do not desire them. They want larger salaries, and they are going to get them from year to year, but they want the salary when the service is rendered and not in the form of a pension.

While European teachers submit humbly to the assessment of their meager salaries for the benefit of pension funds, Americans will not tolerate such a practice. There is a spirit of personal independence and self reliance among all classes here, and teachers are happily no exception, that makes such an autocratic policy repugnant. I need only to quote from the pointed address and petition of Chicago teachers

for the repeal of the compulsory clause of the Teachers' Retirement Act, to show unmistakably their attitude on this question. "We, public school teachers of Chicago, are opposed to the present pension law, or the enactment of any so-called pension law containing a compulsory clause." We urge this for the following reasons:

1st. If the pension law is desirable it does not need to be compulsory, a simple enabling act is enough.

2d. Wise provision for one is not necessarily wise provision for another. Each should be free to choose for himself.

3d. According to an estimate made by Mr. W. E. Watt, only one out of every twenty-five contributors will ever receive a pension. The rest resign or get married or accept positions elsewhere, or die in the service. It has the appearance of a lottery in which there is one prize for every twenty-five tickets. We do not ask that the lottery be abolished, but we ask that the law shall cease compelling us to purchase tickets.

4th. We hold that everyone should be free to spend the dollar earned in accordance with individual judgment.

The compulsory clause was repealed, and 1,400 Chicago teachers withdrew at once and stopped assessment of their salaries. In Ohio it suffered the same fate. If the number of teachers who serve long enough to secure a pension is only one in twenty-five in Chicago, where the tenure of office is secure, what must it be in the smaller cities and in the thousands of districts where it is but a year or a term? Can a system be desirable, that, directly or indirectly, assesses the whole body of teachers for the benefit of 1 in 25 or 50 or 200? Is it reasonable to assume that the thousands of teachers who can never have a claim on a pension, will favor pension legislation?

Not only is the demand for a pension policy wanting but our whole public school organization is such as to make its operation impracticable. Most of our teachers are women, licensed and appointed by local authority from year to year, with an average term of service of three years. The teacher is an itinerant, ever seeking the most remunerative field and the most congenial atmosphere. The number who remain in the service of one city or one state even, for the twenty or thirty years required for a pension, is wholly insignificant. From the very beginning of our history our public school system has grown and developed as a local institution, under local control and supervision and support; modified and adapted in all essentials to suit local needs and conditions. When it is remembered how diverse are the conditions, social and industrial, in different localities of our own state even, it must be conceded that unity and uniformity, such as are needed for the success of a pension policy, are almost wholly lacking.

In Europe conditions are entirely different. There pension funds are usually made up of a variable sum appropriated by government from year to year, together with the proceeds from an assessment of teachers' salaries, arbitrarily retained, and ranging from 1 to 8 per cent. In some systems salary assessment has been discontinued, the whole pension being paid from public funds. In so far as pensions come in whole or in part from the assessment of salaries they are not true pensions but a form of compulsory insurance, based, I suppose, on the theory that a teacher is a sort of improvident creature, unable through lack of ordinary business sense to make that thoughtful preparation for declining years that all others are expected to make. Where pensions are paid directly by government, the action is based on state control and supervision of the whole scheme of education; on complete domination of its institutions. The pension systems of Europe are a concomitant of a highly centralized and monarchical form of government. In a recent report of the minister of education of Brandenburg may be found this statement: "The right of the government to demand the payment of pensions is founded upon its right to define the limits of the support of the poor" and the pensioning of teachers is therefore considered under the head of "Care for the Poor."

Statements similar to this in spirit if not in letter are found everywhere in the arguments of pension advocates. Even Boston has listened to a like humiliating doctrine in a recent report of the Superintendent of Schools wherein it is written: "One argument for a pension system is the claim that long tried and faithful servants have to considerate and merciful treatment." What do you think of it,—you who desire your life work raised to the dignity of a profession, to come face to face with a proposition that advocates for us a "considerate and merciful treatment?" If the Boston and Brandenburg view is correct, let us get out of the school room and into the freer atmosphere that invigorates and inspires instead of humiliates.

Granted that pension systems are in vogue in Europe, this is no argument for establishing similar systems in America, nor that if established they would be beneficial to American teachers. European pension systems are in strict harmony with the other social and political institutions. There the teachers are mostly men, receiving their education, their license and their appointment from the state, not for a year, as is almost universally the practice in America, but for life. There a teacher is assigned to a certain school in which he will continue to the completion of the 20 to 40 years, when he becomes a claimant for a pension. Everything is marked by uniformity and a certain stability, social and political, as well as educational. There education is a socialistic, state institution. Here it is a democratic, local institution.

I shall not undertake to discuss the wisdom or folly of conditions in America; with that we have no concern. I do maintain, however, that our educational organization is neither ready nor ripe for a pension system, and is ill-suited to operate one with benefit to any considerable number of teachers.

There is one misapprehension in this connection I wish to correct. Pension advocates point to the greater stability of the teacher abroad, to his longer term of office and surer tenure as a result of the pension system. They mistake effect for cause. Pensions are not the cause of the conditions surrounding the profession of teaching in Europe but the effect. The conditions are centuries older than the oldest pension law, and are characteristic of all professions and vocations. They are a bit of the warp and woof of European life,—the product of slow evolution.

When the new world shall have become old; when Americans shall have lost their versatility, their adaptability to rapidly changing conditions; when they shall be content to rest their laurels on the traditions of the past; when the establishment of a caste system shall have determined the status of all things social, political and educational and they are content to practice the old world precept—once a carpenter always a carpenter, once a teacher always a teacher, once a pawn always a pawn, then it may be practicable and wise and beneficial to pension teachers but not until then.

What effect will pensions have on salaries? In the United States they are the highest in the world, while qualification requirements are the lowest. The salary tables in government reports show that teachers' wages have advanced faster and more surely than salaries and wages in any of the other gainful occupations. I mention this not as an argument that salaries are high enough or that teachers ought to be satisfied. We all agree that they are yet too low. The situation of teachers in this respect is not unique. The plea for better salaries is but an echo of the more urgent plea of the millions in America for better wages. It is a broader question that is broached by the advocacy of pensions as a remedy for low salaries, than merely the alleviation of the wants of the one class of workers,—the teachers.

The Bureau of Education shows the average income in all gainful occupations, including teaching, to be \$600 a year. This includes the colossal incomes of the numerous thousands of millionaires and billionaires. How small, then, must be the yearly income of the laborer. He asks for a living wage just as teachers demand a living salary and the demand is just in both cases. Recent reports of the Bureau of Education show that the average salary paid to all teachers in cities of 8,000 inhabitants or more increased from \$638 in 1898 to \$705 in 1903.

Exact figures for the past two years are not available yet from fragmentary reports it is certain that the increase did not stop with 1903 but is still going on and today salaries in the United States and in Wisconsin are higher than they ever were before. Nor is this favorable showing confined alone to cities. According to the Monograph on Teachers' Salaries, published a few weeks ago by Dr. Harris, the average, monthly salary of all teachers in the United States increased from \$28.54 in 1870 to \$47.50 in 1903—an uninterrupted increase of more than 66 per cent. This is certainly hopeful for the future of the profession.

Before applying these facts and figures to the proposition under discussion let us take a glimpse at teachers' salaries in the pensioned countries of Europe. From 1870, to 1880 a movement for better salaries resulted in substantial increase throughout Europe. This was before the pension systems were perfected and while they were merely teachers' aid associations deriving little or nothing from the public treasuries. Since the 80's, with but few exceptions, no material advance in salaries is evident from any of the reports at command. Especially has arrest of salary advance been the case in those governments and communes where a pure pension system has been established. The distinct tendency under the perfected pension system has been to make teachers' salaries fixed and stationary by central authority.

A comparison of salaries in the German metropolis with those of the American is noteworthy. New York city pays its principals an average annual salary of \$2,777. Berlin pays \$843 with an allowance of \$143 for house rent—\$986 as against \$2,777 in New York. Grade teachers in New York are paid \$996 while in Berlin men teachers receive \$532 and women teachers \$348.

European salary schedules impress the American investigator not only with their smallness, which to some extent is relative, but with their rigidity. No provision is made for special excellence, no inducements are offered to ambition. Everything is pre-arranged by central authority for teachers to get into a rut and stay there until retirement. This arrangement may be satisfactory to European teachers. It is in strict keeping with their personal and mental characteristics and with the prevailing industrial, political and social conditions. It would be otherwise in America. Our teachers would not be contented under the conditions which prevail in Continental Europe.

A pension would do here, as it has done in Europe, fix salaries at a stationary level and would arrest the present hopeful tendency of salary increase. A pension policy would inevitably destroy or nullify the teacher's strongest and best argument for increase. With pensions, high salaries are neither necessary nor desirable. Without them higher

and higher salaries will be paid with the increasing appreciation of the commercial as well as political and social worth of the educational product and with the best and most successful teachers. Not only would pensions complicate the question of salaries but they would make it impossible for teachers to compare their resources with those of other wage earners and they would put teaching on a plane distinctly lower than other professions and vocations.

Let us have none of it. Let us continue to strive for salaries commensurate with the service we render,—for all things that will raise our work to a higher professional level. Let us not mortgage the future of the profession for the prospects of a paltry pension to which not one in fifty of American teachers will ever attain by length of service. Let us not sell our birthright for a mess of pottage.

Frequently the statement is made that persons of large ability do not become teachers and if perchance they do, it is only temporarily, as a stepping stone to other and more lucrative employment. Whether or not this be true matters little. The point involved is this—Anything that will make teaching more attractive to first class ability is greatly to be desired and conversely that which will make it less attractive to such persons and relatively more attractive to small and mediocre ability, will work injury to the profession.

Pension advocates point to the personnel of the teaching force and to the status of the teacher in Europe, as an example of the effect pensions would have upon the character of the talent attracted to teaching in the United States. Let it be admitted that in some ways teaching is more attractive in Germany than in America and that a comparatively high order of talent enters the profession as a life work. Let it be remembered likewise that a relatively high order of ability is necessary to secure legal qualifications there. No such flim-flam make-shifts of teachers' examinations and certification without age or experience requirements are in vogue there as in America. The status of the teacher in Europe, high and attractive as it is from a social standpoint, was such long before the establishment of pensions. The European mind influenced by twenty centuries of monarchical institutions, instinctively venerates authority—be it that of the king, of the magistrate or that of the teacher. The reverence and respect that prompts the European to doff the cap to the preacher and to the schoolmaster is the same as that which prompts him to humble himself before king and kaiser.

It is a matter of sincere regret that teaching in America carries with it so little of respect and social standing. But this could not be improved by a system which makes all teachers prospective pensioners of the state or municipality. Such a system could not make educa-

tional positions attractive to vigorous and energetic minds. These in America would never be lured into the school-room for thirty years by a pension that at most can only keep them clear of the poor-house in the evening of life. Such a prospect cannot, in America, be assumed to be attractive to any but persons of the most limited capacity and ambition and such as these would flood the ranks. Any occupation, easy of attainment, and carrying with it absolute insurance against actual want, would be attractive to thousands of those mediocre, inefficient and ambitionless unfortunates who would of necessity fall by the wayside in the competition with the more vigorous and progressive of their fellows. Graft a pure pension scheme upon our public school system with its low standard of physical and mental qualifications, with its nondescript standing among the professions, with its moderate salaries arrested in their advance by this very scheme and you would have a system becoming less and less attractive to men and women of energy and ability and one that is more and more attractive to mediocrity seeking shelter in an institution that guarantees the necessities of life, while slumbering away the years in the rut that surely leads to retirement.

There is another phase of this question that is usually overlooked by pension advocates, the socialistic tendency of the movement. I have no thought of making a "Bogie man" of socialism. There are worse things in our body-politic. Intelligent men everywhere recognize that socialism aims to cure the ills of society by a complete change in the relation of social and industrial institutions to government. My contention is that the time is not opportune for making teachers the entering wedge of a socialistic revolution. Our teachers are not socialists. Why should they be, with increasing salaries and congenial work. Were we in the ranks of millions who for \$1.50 a day or less, must support a family and lay by the wherewithal to keep the wolf from the door in old age, there would be more ground for the espousal of a cause that at least promises a fairer division of this world's goods.

Throughout the argument of the pension advocate runs this note—a discordant one—that teachers must be guaranteed the comforts of life after retirement. Why must they be guaranteed this? Merely because they are teachers? Do teachers seek the vocation from motives of philanthropy, at the sacrifice of the larger emoluments offered by other callings? There may be such, but they are too saintly for the vigorous work of the school room. No one believes that any considerable number of men and women remain in the work for reasons other than those which prompt the lawyer or physician or craftsman to remain in his. Teaching school is a matter of business; when it becomes more or less than this it will be on a wrong basis professionally and ethi-

cally. Teachers have a claim on society for the service they render; so has the mechanic, the farmer, the professional man. If the teacher on a salary from \$400 to \$4,000 a year has a just claim for a pension then the craftsman and the laborer, on a lower wage, has an equal claim for one. This is socialism—this looking to government for relief from the legitimate responsibilities of life, and if it is good policy for the teacher it is good policy for all producers, all co-partners in the great corporation we call society. If we are not ready to admit that such a degree of paternalism is good for society then we must concede that the application of it to the one class, the teachers, is wrong in theory and harmful in practice.

In conclusion I contend that pensions are not in harmony with the genius of American institutions. America is a synonym for progressiveness and independence—political and personal. In the older countries of Europe, under two thousand years of monarchical institutions, government has come to assume a far more intimate role in the management of the affairs of men than in America. There the individual is an unimportant atom—a pawn—obedient, subservient; trained by the centuries to accept the dictum of authority without question; to accept his allotted place in society without ambition to reach for a station above his birth; trained to view without resentment the fairer fortune that places his superior in rank and power above him.

There the individual is the creature of government. Here government is the creature of the individual. There a man's station in society is determined by the accident of birth. Here by his own energy and ambition he stands on the highest round of the ladder of life for which he is willing to strive. There a teacher is assigned to a school and in that school he continues to labor with salary fixed by government, with increase at long intervals fixed, and with a meager pension he retires to sink into oblivion. Beyond this he has no ambition. He seeks no advancement in grade or position.

Here the teacher accepts the best appointment available at the outset of his career and strives for advance in salary and position. The same characteristics govern him that govern Americans in all other vocations. The pace may be too fast and strenuous at times but it accomplishes things. It is this, which, in spite of poorer preparation, and with fewer years of experience, makes the American teacher the equal in practical results attained, of his conservative, method-bound, European brother. It is this which, far more than anything else, makes our schools so admirably suited for the preparation of American men and women for American life. This, in short, is the genius of American institutions—this individual independence and responsibility and competition. How little in keeping with this is the spirit of

teachers' pensions. How foreign to all preconceived notions of the relation of the individual to government—to the notion of individual ambition and independence?

When our forefathers came to the bleak and desolate shores of New England as pioneers of a new world they left behind them the effete-ness of European institutions—the rubbish of the ages. Let us not now, when our educational institutions are firmly and prosperously grounded upon American ideals, turn our faces to the past and seek, in slavish imitation of another order of things, a remedy so utterly unsuited to our needs.

The Puritan fathers laid the foundation of our splendid public school system. For two hundred years we have fostered and developed that institution,—the most precious we have and the most indigenous. We have corrected mistakes, applied remedies where they were necessary, have made it keep pace with the strenuous march of events. We have made it the proudest monument of the Anglo Saxon on the shores of the western world, and we have kept it American. Let us so keep it in all its purity,—strong, independent, self-reliant, close to the popular heart in response to which it has grown and developed. Let us not weaken it by grafting onto it a policy that will stagnate and atrophy it. Let us not borrow from the old world that which will make of American teachers underpaid hirelings, mere machines, mere plodders, in the rut of the juggernaut of centralized authority. Let us keep the institution we love and in which we contribute our share to the growth and development of our country, true to the ideals of the fathers, true to the genius of American institutions.

"SOME TEACHERS AS I HAVE KNOWN THEM."

AMOS P. WILDER, Madison.

Personally, after hearing the last paper on Food Adulteration I do not care for any dinner. If it takes as long to reform the adulteration of food as it does to tell about it, your insides and mine will look like grandmother's crazy quilt.

I have listened for some hours to a program which has covered all topics and I come to you in a somewhat dazed condition. I listened to the music and other interesting things and I finally listened to Mr. Emery's paper which makes it easy to refrain from that nutritious beverage which contributed to Milwaukee's fame.

I took a trip to California with my oldest son not long ago in the effort to enrich his mind. Before we started he spent most of his time at the hotel looking for an airship which never came. He got a cinder in his eye and after looking down and up and down again, I feared the family traditions would be historically shattered—in the effort to extricate the cinder. He introduced me to seventy-two teachers on the trip—there were one or two he did not introduce me to, but we all have our peculiarities. He was so well informed on all topics and was so genial that all the cowboys and even the Indians agreed that McLene-gan's scholar was the best that ever crossed the plain. It occurred to me that the boys of his district of Milwaukee ought to be thankful to have so good and nice a man at the head of their school.

Whenever I look into a schoolroom and see 'somebody's darlings' managed, I am forcibly reminded of my teacher. I am convinced that any young woman who has chosen this calling is the embodiment of womanly dignity and authority. Still I did not marry into the profession, but married to the contrary, but we also have discipline in our home.

Not long ago I boarded a car in Chicago and noticed a gentleman assisting a lady who was accompanied by seven children. He asked her whether those were her children or whether it was a picnic. She replied, "They are my children and it is no picnic."

I spent two years at teaching. I was a fullledged professor at the age of twenty-two, but have been shrinking ever since and have also been violating the fourth commandment, I think it is the fourth. I

taught on the incentive of my father, who was also a schoolteacher. My teaching was confined to boys at a boarding school. It was hard work to get into my chosen calling. I suppose there is no calling in which humiliation runs so high. I had organized a club among the boys and after I got the thing started, they elected another superior and I went out with tears in my eyes and learned one of the greatest lessons in my life. But one day I was called to the front and presented by my grateful pupils with a sealskin cap, and learned the splendid lesson that life has its triumphs as well as its trials. Teachers, like parents, must wait for appreciation until they are at least thirty years of age and then tributes of appreciation will drift about their graves. Some of us may be ashamed of our old schoolhouse, yet it had its own distinctions, and sometimes some famous man will come and stand in the deserted playground for a time. The first teacher I remember was old even then, we thought; her hair was white, yet she died but a few years ago, having taught school to the end. Though it was thirty years ago, to know that she was gone, strangely moved me, and I still see her in the modest little schoolhouse, kind and helpful, but the embodiment of womanly dignity and authority. How many thousands went out from her I do not know, but it is impressive to think that in all our lives—some two generations of youth—from each of them traces back a golden thread to that firm devoted woman who first taught us the earliest lessons of early relationship. My heart echoes a prayer and may they all meet where the school never closes in the kingdom of our Father.

One of the greatest sins on my conscience was the treatment to which we subjected our teacher. We were at the age of 15 or 16, when life seems a jest. She was a gentle, frail woman, ill-fitted for such a room of boys as we were. I did not understand at that time that she was struggling to hold her position for her helpless mother and the principal must have noticed how she failed to check us, and no doubt he framed his mental notes of "inefficiency" and "discipline." I recall one day when I returned on an errand—it was empty save for one figure—our teacher at her desk—her head buried in her hands, crying as if her heart would break. In an instant the struggle of the human heart lay before me. I have asked God to forgive me and I have told my children so they may add this to their memory.

There are two qualities a teacher should possess, patience and sympathy. Now patience is not a quality which every young teacher has, and to have sympathy, one must be in love. The most effective teacher is the woman who has loved and lost,—they have more optimism than one who has loved and won. Fortunately, there are many people who are in love. Such a mature woman knows that the world was not made

in a day and does not expect the child to learn the multiplication table in a week. Many a candidate for president has spelled separate with an "e."

A child from 6 to 12 years of age is a great responsibility and one trembles as one goes into a room and finds a woman with no interest in her work whose eyes are fixed on pay-day only and is crushing these little innocent bundles of humanity or practices her sarcasm on these little objects. Happily there are not many of these. We parents are indebted beyond words to the school superintendents and authorities who insist that when the city deals with a child, it handles sacred things.

The teachers who left their work on you and me were not the wisest men and women, but they were those who loved us. An inspiring personality counts more than culture and learning. It is the old college professor who made us stay after school and made us sit for some folly.

What you need on this occasion is encouragement. I know of no calling that needs it more. If I were taken away on the cross-roads and had no companions except the buttermakers; if I had to break the ice every morning to wash my face and leave a bright home where they don't use those zebra spelling books; if I had to do this for thirty dollars a month, it would annoy me very much to look at the gentlemen who live in steam heated houses in luxury. My rural friend, I have found it a consolation to say with emphasis, I have not only done my work well, but would like to see someone who would do this job better. I shall not tell you that teaching is hard—nothing is hard in which a man has his heart. If children lack interest and their eyes wander waiting for some one to tell them what to do, it is a gratification to see their faces kindled with enthusiasm.

Some years ago I visited the Home for the Feeble Minded at Chipewa Falls. Many of them were unable to dress or feed themselves—I thought this a beautiful place to be—what must it be to work here. As we walked through the halls we met young men and women teachers in attendance. Their faces were aglow with smiles and sympathy and if they could teach some of those shallow lips to sing a little song, their reward was complete.

You may comfort yourself by the thought that some day even among those callous youth some one will sing a song and great numbers will stand with bare heads and one man will raise his hand and the crowd will look at his honest eye. Some one may come to your down trodden resting place with some message that shall make tired women smile and little children look up and if among your charges someone shall have made the world better, you will be satisfied.

ENTRANCE REQUIREMENTS TO THE UNIVERSITY.

JAMES A. SHERIDAN, Milwaukee, Wis.

The state university is the creature of state law and is a constituent of its public school system. It is supported by public taxation as is the little red school house at the cross roads and its purpose is the same. The state expects of both that this influence will make for the interests of the people; and both are entitled to the same consideration.

The university receives its students mainly from the high schools. For about ten years, it has closely supervised the work of these schools, practically prescribing their courses of study and it is now practically naming their teachers.

The supervision of the university tends to make preparatory schools out of the high schools although but about fourteen per cent of their graduates reach its halls. The public look to the high schools to prepare teachers for the common schools and competent men for the shop and the counting room. Many schools of the state are limited to a single course of study. If these communities are to be represented at the university, their schools must be purely preparatory in character; they cannot finish pupils for business occupation. In such case all other demands on such high schools are subordinate to university dictum.

The university has recently added a requirement of two years instruction in either German or French of all candidates for admission. This requirement is as arbitrary as it is nonsensical and shows a disposition to make the high schools purely preparatory in their function to university courses. The university advises that this requirement may be made up by a few weeks attendance at its summer school. This announcement proclaims its folly. High school instruction for a period of two years, to say nothing of a few weeks work at a summer school, in either German or French for practical use in business engagements is a sheer waste of time. It, however, serves the purpose of excluding the smaller communities from sending students to the university. Several years of close study must be given to either French or German to make them of value.

Preparatory work for the university is not the best training for teachers and the every day requirements of business life. It excludes manual training and instruction in domestic science—the educational

value of which the university recognizes when, after admission is gained by a student, he is allowed to substitute the work done in our manual training departments for work required in the course of the university. Would it not be good sense to consider manual training a preparatory study?

The county superintendent shows that a candidate for a certificate should be specially prepared. The state prescribes instruction in theory and practice of teaching, requires an examination in it, but the university ignores it as a preparatory study. Its value to the pupil, however considered, is fully equivalent to the smattering of German and French required.

The student who completes a course in manual training cannot enter the university. If he decides to do so, he must return to the high school for an additional year.

Entrance requirements to the engineering department now compel that high schools do freshman work in algebra that is done in all other courses at the university. Why this requirement when its effect will bar these courses to the schools of the state whose resources are not sufficient to give this additional instruction?

The university makes no provision whatever for those pupils who are taking commercial courses, although it has established a commercial course itself. In this case the university serves a notice on a boy who takes a commercial course in a high school, that he must give up all thoughts of entering the university because of his choice.

If mental ability to do college work and maturity of mind to profit by it, are the test by which a pupil is measured for his fitness for further education, the university is not adopting the right standards of admission. It is putting an arbitrary standard in the path of the young folks of this state and doing it in a school for which the young folk's parents are paying the bills and in face of the fact that any young man or woman who wishes to attend the university and who can enter any of its classes without detriment on account of his short comings in a branch or two, has a right to go there and ought not to be barred because he is technically unable to climb over a fence of arbitrary height built around the university by its faculty. The policy of the university is wrong unless it is based on the idea of the greatest good to the greatest number. It is the greatest number that is called upon to put up the revenues that support it.

Is the university over-crowded; its faculty over-worked? A glimpse at its catalogue shows about eighty-five of its professors engaged in lecturing to about 120 post graduates of whom 65 had graduated from other colleges, nearly all of whom were non-residents of Wisconsin. In the same catalogue some two hundred names are given as instructors not

one of whom is let loose in the post graduate fold. It appears to the citizen on the outside that the interests of the undergraduate should be first considered and the young people of the state should be encouraged to become such. In case there is a surplus of energy it may be expended upon non-resident graduates. The fostering of the post graduate department to the detriment of the undergraduates is a mistake. The undergraduate is assigned to instructors of very ordinary ability. To this is due the complaint of the students that the professors are so absorbed in research "that their interests in student life is strophied." In the Sphinx of May 12, 1905:

"Supposedly the University of Wisconsin is supported by the state in order that its young men and women may get a thorough college training. This is the main purpose. * * * * Yet at present the tendency is otherwise. President Van Hise works and talks and urges more and higher graduate work; more "research," and while he does also faithfully labor for undergraduate improvement, it is not his first love, nor does it claim equal enthusiasm."

If this complaint arises out of the conditions of the University, it furnishes a partial explanation of its exclusive policy and arbitrary entrance requirements. The boy who pursues a course in manual training or in commerce in the high school should not be shut out of the university to make room for the graduates of any university or college foreign to Wisconsin.

Entrance to the university is gained by credits received in the high school which are marks given for study of certain branches for a specified period. This policy emphasizes the teaching of subjects, while as a matter of fact, the really great thing is the teaching of boys and girls. Formerly a school might develop capacity in pupils regardless of the number of branches pursued and such were admitted to the university upon the recommendation of the principal.

It appears that the University of Wisconsin, co-operating with the University of Chicago and other colleges have organized The North Central Association of Colleges and Secondary Schools. The terms on which a secondary school is admitted to this select circle are many. But a small school with fewer than five teachers is barred although its graduates may acquire a grip upon facts, a mastery of details, a maturity of mind and habits of study that better prepare them than the average graduates from the larger schools. It is all proper for the University of Chicago to do this and if it choose, assume the arrogant attitude towards the public of its founder whose profound admiration of the bible is surpassed only by his respect for the subtle subterfuges of extortion from which flow the revenues of the school. But the University of Wisconsin is differently circumstanced. It is supported

by general taxation; Wisconsin people pay it, hence the University of Wisconsin should keep in mind first the interests of all the people of the state. Its policy must be liberal, not exclusive and select.

It is evident that the university should admit graduates from an English course and from any course in a high school provided the principal of the school will recommend the candidate for admission. Such policy will encourage teachers to develop character and capacity in their pupils regardless of units measured by branches and time. The discarded policy of a few years ago is far in advance of the present one. It was expressed by Prof. Birge in a letter to a Milwaukee principal thus: "We accept without question all graduates of accredited high schools who are recommended for admission by the principal. We are ready to consider recommendations of principals in exceptional cases where students have not graduated."

UNIVERSITY ENTRANCE REQUIREMENTS AND THE SECONDARY SCHOOLS.

Prof. M. S. SLAUGHTER, University of Wisconsin.

Mr. President, Ladies and Gentlemen:

I am very sorry that I didn't know before what Mr. Sheridan was going to say. Thought I should certainly find him yesterday, but lo and behold! he was in Indiana. All night I had whirling visions in my brain and pictures in my mind of Sheridan 100 miles away—50 miles away—15 miles away, and I find he is here—the whirlwind has passed and I am quite alive yet.

On the question "University Entrance Requirements and the Secondary Schools" there are more points of view than have been presented to you. Had I known what he was going to say, I would have prepared some sort of an answer to the first fifteen minutes. I have never been in a joint debate with Mr. Sheridan and he knows how to make the worst appear in the most beautiful words.

To correct a few of his statements, I will say (1) that much abused unit system of ours which he says calls for eight units of foreign languages and four units of English. This is not the case; it allows four units of foreign languages and eight units of English. (2) Then there is another thing I want to call your attention to. He talked about taking pupils by their capacity. How are you going to measure capacity? It is an utter impossibility for any examining board to tell capacity of a scholar, except by testing it. I wish there were some other way. Perhaps there will be in the millennium.

In discussing the question of the university entrance requirements and their bearing, legitimate or otherwise upon the curriculum of the high schools of the state, I can not in the fifteen minutes allotted me attempt to touch upon all the points at issue, but must confine my attention to those which seem to me the most important. In the first place it should be clearly understood that there is no disposition on the part of any one I know at the university to insist that the primary purpose of the high school is to prepare for college. No one who knows at all the work that must be done in the high schools can maintain for a minute such an absolute position. And furthermore the fact that so few departments in the university pretend at all to build their work upon the work done in the high schools would be sufficient refutation of such a position were it by any chance held.

HIGH SCHOOL AN END IN ITSELF.

At the same time, here in the west and more and more in the east the high school is found to be the one way open to an ambitious but not wealthy youth to the higher institution. The private fitting school and the academy find little or no patronage in the west and the work that might be done by such institutions has necessarily fallen to the public schools—where there is always to be found a small body of students who have in mind the advanced work of a college or university. These students must be served too, and no principal here would be willing so to arrange the curriculum of his school as deliberately to exclude or limit the privileges of such students, for he and his teacher find that from them as a rule they get the most appreciative work. This body of students, small a few years ago, has grown very rapidly and the town that five or ten years ago sent two students now sends ten to the university—and the end is not yet, for with the growth of wealth and leisure in the state, there can be no diminution in the numbers of young people anxious to avail themselves of all the educational advantages of the day. More high schools will have to be built.

In view of existing conditions and particularly with an eye to the future possibilities of the situation, the university has led in a movement to unite the interests of all the institutions of higher education in the state; a better working basis has been arranged for the co-ordination of the courses in the normal schools and the courses in the university; and with the colleges too, at least with some of them, the new arrangement calls for as far as possible identical entrance requirements and identical or equivalent requirements which for the bachelor's degree appealed to the colleges as reasonable. This movement, which has a bearing on this discussion, is most significant for the future of education in Wisconsin, and the University feels that it must be fostered in every legitimate way.

In considering what she can do for all the young people who must inevitably come up to her from year to year, in spite of all the other institutions in the state ready to receive them, and anxious naturally to do her best for all who may commit to her the sacred charge of their education, the University on taking an account of stock discovered that on the whole, with conditions here and elsewhere as they are, she has been and is putting out altogether too much money for a sort of elementary instruction which ought to have been done for her in some previous stage of the student's career, but which has been neglected through the failure of some earlier institution to recognize its privileges. This work the University has been compelled to do, and has therefore been unable to do other work of strictly University grade.

To take a concrete example afforded by the current criticisms of our entrance requirements—the University spends five times as much of the state's money for instruction in elementary foreign languages as she ought to spend, and for a much slighter return than one-fifth that amount of money would have secured if expended at the proper time. In the business world this would be called recklessly shortsighted. This is the most palpable case, but by those who do not fully recognize all its bearings is the one most frequently cited.

Had I time I should like to cite other and better reasons why the high schools of Wisconsin can not afford to neglect one whole line of discipline—a discipline scarcely recognized in the minimum two years of foreign language now asked for for entrance to the University, for the arguments in favor of a fuller recognition of that linguistic discipline found only in the study of foreign language are fully as cogent as are the arguments in favor of the historical or mathematical or scientific disciplines, and quite as practical. And these arguments gain added force for the high schools when the constituency of the high schools is taken into account, to at least two-thirds of which the study of language and literature represents the highest practical values—especially when it is remembered that so many of them are not likely to enjoy further opportunity of training along this line after leaving the high school.

Those who come on to the University with this minimum requirement, or as some do, even without that, must devote hours of hard labor to work which would have come easy to them at the proper stage of their education, or else be handicapped without certain useful tools and be forever without some points of contact with the highest interests of life.

So much for the requirement in foreign language—it is to save the state's money and the student's time, and to emphasize an important line of discipline—that we ask the high schools to recognize their privileges in this respect.

The policy of the University of Wisconsin has always been to express her requirements in the lowest possible terms. This point of view has been especially recognized by the unit system of requirements for admission which went into effect three years ago. Under this system only six units are absolutely required and the rest may be provided for by any one of four groups. The system, therefore, is highly flexible and it is possible for any high school to adapt its curriculum to the needs of the community in which it is located and at the same time to give instruction which will enable those students who expect to enter the University to fulfil her requirements.

Compare the University's requirements with those of institutions of

her class—with those for example of the University of Michigan or California, or others near at home, and you will find that while they may differ in a detail here or there, there is a strange agreement as to the essential and fundamental things. More foreign language, more mathematics or more English may be required at these institutions than the University of Wisconsin requires, *but never less*. In the groups of units required of all the maximum amount in any subject is two years' work, which, by the way, in certain lines is found to be less than the superintendents' course requires. The regular high school course in this state, making provision for four years' work, calls for 16 units. Here again the University has deliberately demanded a smaller number of units for entrance than the high school course provides for. She asks for 14 units. This is a very important point in discussion, for this was done deliberately so as not to crowd the high school with University requirements. Together with the fact that allowance of at least one unit is made in cases of deficiency, a practice followed by all examining boards, students have this year been admitted on 13 units. As you see, this gives a large opportunity in the course for certain free subjects which have as yet not been recognized as offering that training which University work presupposes. A further privilege is extended to the high schools of this state, but not to those of other states, by which graduates of the English course can enter without foreign language, provided they can offer 14 units. There may be difficulty, I can see, in finding the fourteen units, but that is yet to be worked out, and the foreign language must be made up at the University.

In this acceptance of 14 units for entrance while the high school course provides for 16 units, the University would also meet the needs of the student in the high school who decides late in his course that he wants to go to college. Any decision short of the senior year would certainly be met in this way, unless a most unusual course has been pursued. In cases of the latter kind, what is the severest penalty that would fall upon the one who makes up his mind too late? Certainly nothing worse than to spend an additional year in the work of preparation. This can hardly be prevented by any system of entrance requirements that are at all well lived up to—and while it may seem hard in some individual cases, it can hardly be helped and is exactly what happens in life—where it is the remarkable exception for the eleventh hour man to receive a full day's wages.

It is quite useless to discuss here the relative value of certain subjects on which anything like agreement is impossible, e. g., some of the commercial studies and some of the work of the manual training courses. Those particularly interested in this line of work at the

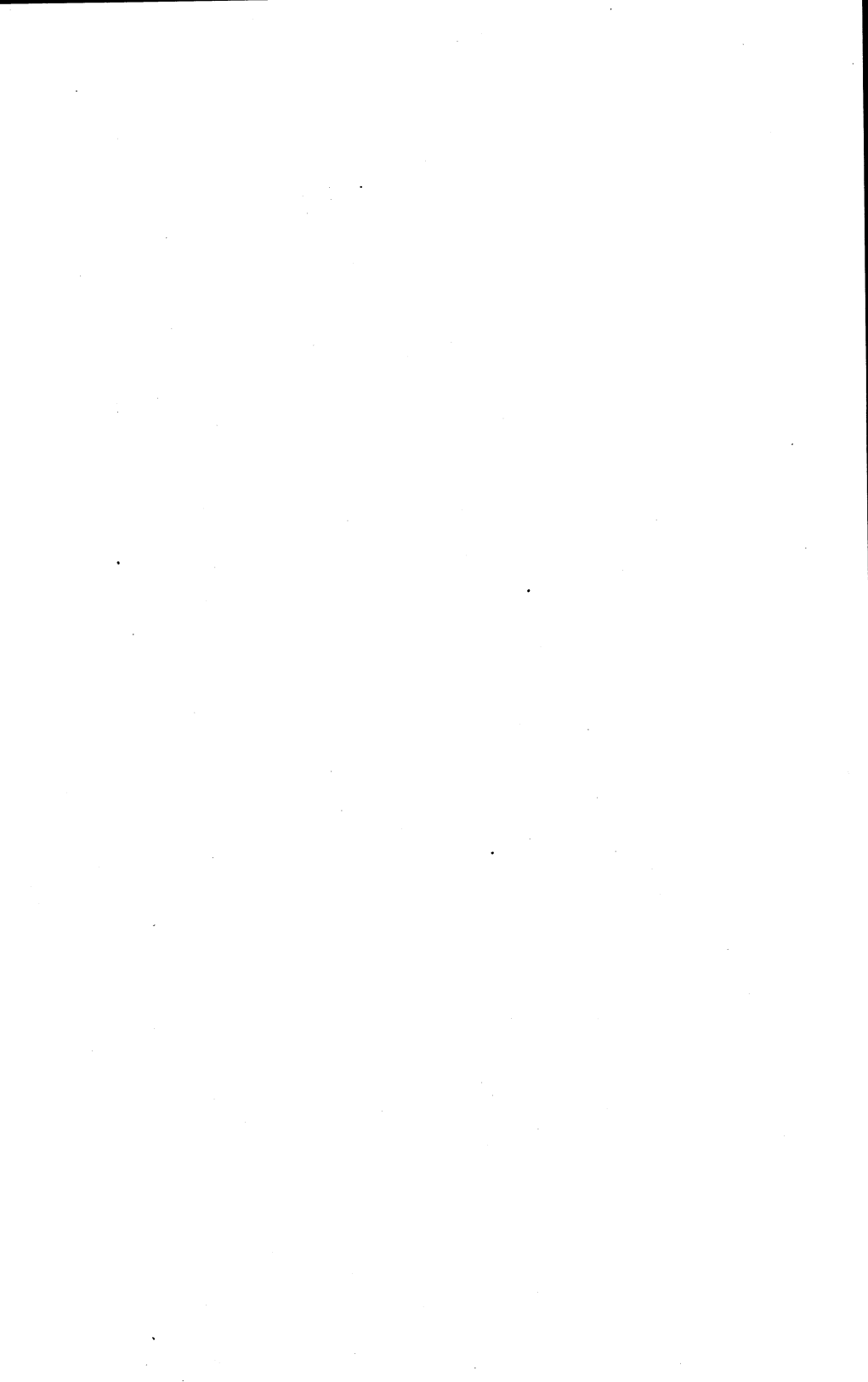
University are of the opinion that while this work may be very much worth while at an early stage of the student's career, for those who are coming to the University it is largely misdirected energy and for them at least is not so valuable as a like amount of energy expended upon more fundamental subjects, both because they are fundamental and because as yet they make a larger return in power for the effort expended, and the student as a rule does not have time for both the fundamental subjects and the special and technical. Students preparing to enter the engineering courses are recommended to satisfy the University's highest language requirement as the very best preparation for their future work. The same thing is held to be true for those who contemplate entering the course in commerce. This is not an arbitrary position, but is the result of years of experience in directing the work and does not in the least arise from a spirit of antagonism to the efforts put forth by the schools along the same lines.

The University feels that the highest interests of the state and at the same time which amounts to the same thing, the highest interests of the students who come to her, are best served by the high schools giving the fullest possible recognition to the fundamental subjects, like English and Mathematics and Science and History and the Languages subjects that are recognized as essential and fundamental by all institutions in the entire country. It is not a local question and no single institution can differ much from the common practice without endangering her position and prestige, and what is of greater importance, injuring and limiting her service to the state.

The University of Wisconsin has won for herself an enviable reputation and a high place among the best institutions in this country, but this high place can not be maintained by setting up individual and local standards either for entrance or graduation. The fact that the University is supported by state taxation instead of calling for a lowering of standards or an effort to make things easy is really the strongest reason in the world why she should set her standards high, why she should do everything in her power to make herself the most efficient instrument for the best education of the people. Freed from dependence on tuition fees and from the restraints of private opinion, the State University has entered upon a world whose horizon is boundless, and whose possibilities of service to the state are limitless. She has always had the hearty support of the high schools—the only preparatory schools she knows—in every effort she has made after better things, and the bond of sympathy and mutual service is growing stronger every day. The whole system of accrediting schools is of immense value not simply to the University but to the high schools, too, not to the high schools of the larger cities perhaps as much as to those

in the smaller towns where the lamp of learning burns less brightly and must be passed on by tender hands.

If this generous support is to be continued and this mutual helpfulness increased, the principal of the high school must be fully awake to his high calling for in the perfect working out of the scheme of state education from the kindergarten to the graduate school no man in the whole line occupies a position of greater responsibility than does the principal of the high school. His school is the link between the grades and the University—his students are at that stage of life and education which by all is considered the most important and the most far reaching in its consequences for good or ill. The principal must adjust the desires and needs of the student to the demands of the curriculum and he by wise administration and advice can save him from wasting his efforts and misdirecting his energy. Such a position ought to be held only by men of the highest character and of the soundest intellectual training. With such men at the head of all the Wisconsin high schools, the "Wisconsin system" must take on a new meaning, and the man educated in Wisconsin become known far and wide as a man of power, that comes from long continued hard work, and as a man of intelligence and self control that comes from the possession of wide and deep interests in the essential things of life.





HON. C. P. CARY.

CONSOLIDATION OF DISTRICTS AND TRANSPORTATION OF
PUPILS.

HON. C. P. CARY, Madison.

Recently a school master said, "I am unqualifiedly in favor of consolidation of schools." When his cocksureness was put to the rack of argument, he ended by saying he did not know whether he favored consolidation and transportation or not. "It depends," said he, and so it does.

In a recent school board convention in this state, a man whose prejudices were greatly in excess of his good sense interrupted a speaker, took the floor, and declared that under no circumstances was he in favor of consolidation. The speaker who had been interrupted calmly said, "Give your reasons—you have the floor." It was immediately evident that he was sorry he had the floor, and after an ineffectual effort to frame a sentence or two he sat down to meditate probably for the first time, on the subject of consolidation. These two extremists are typical of much that we hear on the subject. One school master or superintendent will ask another, "Are you in favor of consolidation?" "Yes." "Good! So am I." One farmer meets another and says, "What do you think of consolidation?" "I am agin it." "Shake! So am I."

To hear some school masters talk on this subject, one is reminded of the dose of treacle every boy in Squeer's school was required to take whether his symptoms indicated it or not.

Consolidation and transportation are problems for every community, and into these problems enter many local factors. No algebraic formula can be made out once for all, and to be regarded as universally valid. On the other hand, the writers on this subject have, so far as I have observed, grouped the arguments for consolidation in an undifferentiated group, and the objections are likewise grouped, as if all arguments applied to every case, and all objections could likewise be urged. It is the purpose of this paper to discriminate somewhat more carefully than has been done before with respect to the advantages and disadvantages under typical circumstances. Lack of time and fear of wearying my audience will prevent my going into minute details. Under present laws in our state, school districts may be united in three different ways.

1st. By the suspension of school in one or more districts and the payment of tuition of the pupils in another school. Sub-section 15 of section 430 of the School Code gives the electors of the district the power at the annual, or any special meeting called for that purpose, to authorize the school board to suspend the district school for such length of time as they may deem expedient, and to arrange with any adjoining or other district or districts for the instruction of persons of school age residing in the district, during the time the school may be suspended. Authority is also given in the same and the following sub-section for authorizing the school board to provide for the free transportation of any or all children residing in the district to and from the schoolhouse, and to levy a tax sufficient in amount to cover the expense thus incurred. (See sub-sections 15-16, section 430.) By this method the district retains its organization, including school officers, right to hold meetings, etc. It is also entitled to its pro rata share of the common school fund.

2d. Consolidation of school districts by the town board of supervisors. If it is deemed best to consolidate school districts, application may be made to the town board of supervisors for the consolidation of the school districts, when the schools are under the district system. The law clothes the town board of supervisors with authority to consolidate districts upon their own motion. As a rule, however, these officials wait until they have been requested by a petition to effect a consolidation. (See section 412.)

3d. Consolidation of schools under the township system. Under the township system the town board of school directors has authority to abolish sub-districts and to provide for their consolidation. The board has also the power to arrange for the transportation of any or all pupils who live in the said town, to and from any school or schools which the said board shall have established, maintained or designated. (See page 212, section 524, School Code. See also section 526, page 212, School Code.)

ADVANTAGES RESULTING FROM CONSOLIDATION OF DISTRICTS.

Where two or more districts in which there are few school children, are combined, either temporarily or permanently, without public transportation, the advantages are two: 1. Greater economy or more properly speaking, the ability of the consolidated district to engage a better teacher and provide better equipment. 2. More enthusiasm and school spirit.

The disadvantage is in most cases a greater distance for some pupils to go to school and consequently greater exposure and poorer attendance. It is evident without argument that in some cases the advan-

tages will outweigh the disadvantages and in other cases the reverse will be true,—at least for a considerable portion of the district.

When two or more small but populous districts are combined in such a way as to create a central school within easy reach of all without transportation, and a graded school is formed with three or more teachers (as is the case some six miles from Antigo, in Langlade county), the result is excellent from all essential points of view. I believe it is no exaggeration to say there are opportunities for the formation of one thousand such graded schools in this state.

When school districts are so combined as to necessitate transportation at public expense, and a graded school, or graded school with high school department is formed, the result is much more complex. That a good graded school, or graded school with high school department is, or should be, superior to a one room rural school, no school master will be likely to question, albeit some parents do seriously question the advantage. In all such cases of consolidation the advantages are first, the advantages of a large school over a small. These are:

1. Better grading and classification of pupils.
2. More time for instruction. A class exercise in a crowded rural school may not be more than ten minutes, while in a graded school it may be two or even three times as long.
3. Greater interest and enthusiasm.
4. Usually a building better adapted for school purposes in respect to ventilating, lighting, heating, and seating.
5. Better supervision and usually, though not necessarily, better teachers.
6. Usually, though not necessarily, longer school term.
7. Usually though not necessarily, better equipment.
8. A better school results in a better school sentiment in the community, and this expresses itself in many ways, as, for instance, in a determination on the part of an increased number of parents to give their children larger opportunities for training and culture.

It is at this point we reach the problem of transportation at public expense.

Two methods of procedure are common. One is to give to the parents of children who are entitled to transportation, an amount of money depending upon number of children, number of days of attendance, and perhaps distance from school. Under such circumstances children may walk or the parents may take them to school.

The second method is for the district to engage teams and drivers, map out routes, arrange time tables, and see to it that all to be transported are properly taken care of on the road to and from the school. Usually it is found necessary to have children who live off the main highway walk to the highway to meet the public conveyance.

When transportation is suggested to a community, many questions naturally and properly arise. What about the cost? Is it practicable? Will the drivers not get drunk, fail to come for the children, let the team run away? Will not the wagon upset? Will children go to school at all in this way? Will it not at times storm so the wagon cannot get to the school, or get the children back home? Will not the children in the wagon quarrel, fight, be rude or indulge in vulgar talk? Will they not suffer from the cold on the long drive? Will not children get wet feet or clothing before they reach the wagon? Will it not injure the children's health to eat a cold lunch at noon? Will there not be danger to the morals of the children if left alone while the teacher goes to dinner at the noon hour? Will not the market value of farms depreciate? Shall we not be deprived of the help our children usually give us morning and evening?

The advocate of consolidation and transportation may and often does say glibly, "No; these are only imaginary difficulties. Not one of them is real; at every point there is gain by transportation or at least no danger or loss." This does not satisfy the conservative, thoughtful people in the communities that have transportation under consideration. There are times and places in which all these questions may safely be answered in the negative. In yet other cases some of the objections hold and some do not, and the balance between advantages and disadvantages must be carefully struck. For some ten years this question has been agitated in this state and yet when all county superintendents were requested last September to report to the office of the state superintendent what progress had been made in the state, the replies showed fewer than ten cases of consolidation for the whole state, and transportation is carried on for the whole state of Wisconsin by means of seventeen teams, if the reports of county superintendents may be relied upon.

In Rusk county alone there are twelve teams employed, so that for the remainder of the state of Wisconsin there are five teams. I shall take the liberty of reading the terse, business-like report of County Superintendent W. N. Mackin, whose county (Rusk) enjoys the distinction of having more than twice as many teams employed in transportation of school children as all the remainder of the state put together:

"In Rusk county there is one rural district that transports children to a school in the country. This school was organized in 1902. It is located three miles north of Ladysmith in the town of Flambeau at the southeast corner of section 16, township 35, range 6, west. This is the center of the township.

There were no district schools abandoned to form this school but two

more schools would be needed if the pupils were not carried. There is one department in the school, fifteen children are transported by two teams, and the cost was \$600.

The teacher's salary was \$315, and the entire cost was less than it would have been if the two extra schools had been maintained. The instruction was equal to that in other schools but superior to what could be expected if the school should be divided into three schools. The prevailing sentiment is now in favor of transportation, though many were opposed to it at first.

At Murry, nine pupils on the average were carried to a one-department school. Two rigs were used and the cost was \$161.

The teacher's salary was \$405. The cost is much less than it would be if another school were established, and the instruction is superior to that of most country schools."

The sentiment in the district is divided but those transported are in favor of the system.

GRADED SCHOOLS IN VILLAGES.

Glen Flora. Two departments were organized in 1896 at Glen Flora, but there were no rural schools abandoned. A third department was added in 1900. Twenty pupils were transported with four teams for a part of the year, at a cost of about \$450. The salaries of the teachers amounted to \$1,395. The instruction was better than in the country schools. The cost is less than it would be if new schools should be maintained. The sentiment of those affected is strongly in favor of transportation; though some within transporting distance wanted school houses and two school houses have been built, each about two and one-half miles from the village school.

Ingram. Two departments were organized at Ingram in 1902. There were no country schools. Twelve pupils were transported by one team. The cost for the entire year was \$180. Teachers' salaries, \$900. The cost is much less than it would be if a country school were maintained and the instruction is superior. Sentiment is about equally divided.

Tony. Two departments were organized in 1898 at Tony, and in 1900 transportation of children to the village was begun and a third department was added. (The town was divided and one route was abandoned, a school house being built two and a half miles from the village school.) There are now four teachers. About forty children are transported in three rigs at a cost of \$900. Teachers' salaries, \$1,845. Sentiment divided, majority favorable to transportation."

A few years ago the institute conductors from the several normals went out into the rural districts in many counties, and talked consoli-

dation and transportation of pupils. No doubt they presented the matter forcibly and well, but little in the way of permanent results remains.

The state superintendents for the past ten years, and the various assistants have tendered their services whenever and wherever it appeared good might be accomplished in this field. County superintendents have generally been advocates of consolidation. Notwithstanding all this and much more than has been mentioned, Wisconsin is practically without a single good, typical example of consolidation and transportation. Senator Stout last year promised the people in one of the villages of Dunn county, and some adjacent districts that he would see to it that their schools would not cost them in excess of the present cost for five years, if they would give consolidation and transportation a fair trial. Notwithstanding the fact that meetings were held and the matter presented in its most enticing form, the people refused to try the experiment.

Those who would like to see consolidation and transportation of pupils at public expense spread over large areas of the state must indeed learn to labor and to wait. No opportunity has yet offered for me to investigate the much-discussed and much-praised efforts of other states in the direction of consolidation. I was recently much disappointed, however, in visiting one consolidated school in a neighboring state. In the case to which reference is made, a case concerning which we have heard much, there is no such thing as transportation at public expense, and yet a taxpayer's receipt for taxes showed that a certain hundred acre farm in one of the consolidated districts was assessed over four times as much for school purposes alone since consolidation, and another tract of eighty acres in another one of the consolidated districts was taxed more than three times as high as before, though the valuation had not increased in either case. Some citizens of the district were disposed to say that the school was a poor one. It certainly was poor the day I saw it, but the conditions on that day were very unfavorable, and I withheld judgment.

I have spoken thus for the purpose not of discouraging efforts in the direction of consolidation, but rather that we may face squarely the difficulties that are confronting us. Too often friends of consolidation have gone at the matter as a lawyer pleads his case, namely, by presenting one side and that the most favorable one. The time is at hand when the people of the state should know the pros and cons of the matter, and it is my present intention to present these personally and through members of the department at the school board conventions in many counties next year. This of course in addition to the various other lines of effort that have been carried on in the past.

Personally I am strongly in favor of consolidation of schools whenever and wherever the conditions warrant it. And the conditions always warrant it whenever the school population is small, but compact, the salaries paid teachers low, and the condition of the roads such as to render transportation feasible. In sparsely settled districts, where distances are great and roads bad, the difficulties are serious, if not insuperable; but in all portions of the state where the population is sufficiently well grouped transportation can be established to the great advantage of all concerned. There is not the slightest doubt that when properly managed, the transportation of pupils is better from the point of morals and of health than where pupils are obliged to walk to and from school. It has been fully demonstrated that with transportation pupils are never tardy and rarely absent. Those of us who have attended country schools well know that the morals of children are often undermined by the evil influences at work where children go back and forth unattended, by two's and four's and larger groups. Again, in stormy and severe weather a careful parent is scarcely willing to allow his young children to walk any considerable distance to and from school, and yet it is frequently a great inconvenience and loss of time to prepare a team and take the children back and forth. So far as the school itself is concerned, the consolidated district can and does secure better teachers, better heating and lighting, better desks and apparatus, better grading, longer term of school, greater emulation and school spirit, and greater impetus is given to pupils to complete the course of study and even to carry on work in higher institutions of learning.

A SQUARE DEAL FOR THE COUNTRY SCHOOLS.

HON. ALFRED BAYLISS, Springfield, Ill.

I have been invited to speak to you about the "country" school. The topic seems to imply that the common schools in the country are a class by themselves; that there are peculiarities in their needs, characteristics, or efficiencies which somehow differentiate them from common schools in town, and require specific consideration.

I wish, briefly, to refer to some of the grounds for this prevalent and perhaps, justifiable notion. First, as to the customary provisions for the material comfort and convenience of the school—the place where the teacher and children come together to live, and work, and grow—mentally, morally and physically. We all know the country school house, at least from the outside. With, in Illinois at least, a gradually increasing number of exceptions, any district could trade school houses with any other, unsight and unseen, and neither gain nor lose by the operation. It usually stands end to the road, has two or three windows on each side, and a door in the road end, which commonly opens directly into the school room. Cloak rooms are the exception. There is not always shelf or closet room for the scanty apparatus. The heat usually comes from a stove so placed that some of the children are always too warm and others always too cold. There is no provision for ventilation, but plenty for direct drafts of cold air. The walls are customarily dingy and devoid of ornament. The floor is not invariably clean. Few country teachers are eligible on their merits for promotion to the important position of janitor in a city school. The working equipment is often meager, and more often unsuitable. The school grounds are too small, and are very rarely well kept. The out buildings are frequently ugly looking, and sometimes utterly disreputable, both within and without. As a rule, all these things are much better in town. There is hardly a thriving community of 1,000 people and upward in Illinois in which the school house is not handsome, comfortable, well lighted; heated and well kept. Not infrequently, the town schoolhouse is rather a well ventilated building. Convenient cloak rooms, closet, ornamented and well equipped school rooms are the rule rather than the exception. This will be universally true before long (and, possibly, already is so in Wisconsin). Except in the larger cities there is the same difference in the

grounds, though we do not yet furnish them as we should,—for the purpose of exercise and play.

Secondly, while some of the alleged effects of over-organization in the graded town schools may be conceded—at least in the past tense—the facilities for work are almost invariably more adequate than in the country. The country school is not only a one room school, but it is a one-teacher school. In the organized graded school, with three or four or more teachers, even when the principal is a teacher on full time, the influences of comparison, example, emulation, criticism, correction, and co-operation, are always operative to some extent, the combined effect being wholesome and stimulating. Generally speaking, it is within bounds to say that the town school teacher works, with these advantages, under the influence of light, warmth, trees, books, pictures,—an environment,—while the country teacher with inferior facilities, and comparatively depressing surroundings, bravely attacks a much more difficult problem, in the hope that she will be called next year to a place in some school with a janitor, in which the work will be lighter, and she will be paid more dollars a month for more months in the year. It is this hope which stimulates her and helps to make her a better teacher.

In the third place, the quality of the city teaching body is superior. I am not speaking of individuals, nor suggesting that there is a regular gradation which would rate the best teacher in the country just below the poorest in town. I wish to avoid absurdities as well as hyperbole. But I was once misunderstood about to that effect, and publicly challenged to name two town teachers as good as so-and-so and such-a-one, in a certain two country districts. I do not mean anything of that sort. If a rational test of comparative efficiency were possible, and a search warrant out for the best individual working teacher in Wisconsin, the chances that she would be discovered in the country, are at least in the ratio of the relative numbers employed in town and country. There is a young man in the Agricultural College of the University of Illinois, who rode six miles a day, for four years, to a high school in another township, taught school where he could for a year or two, took the full course at our best State Normal School, then taught two years in a country district, the last being a year of nine school months and his wages eighty dollars a month. No comparison of individuals, in Illinois, could leave that young man out. What I do mean, then, is this. The efficiency of the whole teaching body in town is higher than that of the whole teaching body in the country. It must be so. Let us analyze a single fact. I use Illinois figures, merely because they are a little more accessible to me, but conditions do not vary materially in this group of great states to which

both Wisconsin and Illinois belong. In Illinois, within the school year ending June 30, 1904, we paid to 2,394 men for teaching in graded schools, the sum of \$2,111,569.51, which was an average annual "salary" of \$883.00. To 3,854 men who taught in the ungraded schools, we paid the gross sum of \$990,858.98, which was an average annual "salary" of \$257.00. Likewise, there was paid to 12,780 women for teaching in graded schools, the sum of \$7,670,413.91, and to 8,443 women for teaching in ungraded schools the sum of \$2,039,688.12, the average annual wages being \$600 and \$241, respectively. Or to make the comparison without reference to sex; the average annual payment to teachers in graded schools was \$644.00 against \$246.00 to teachers in ungraded schools. I venture to say, in the hope that I shall be corrected, if in error, that, essentially, these figures illustrate the condition in Michigan, Ohio, Indiana, Iowa and Wisconsin, as well as they do in Illinois. Where then *must* the more efficient group of teachers be found? The conditions under which the work is done in town, and the higher annual wage scale, combine to command the higher qualifications.

I have been told that this comparative wage scale does not prove the proposition. All I can answer is, that it ought to be convincing if it isn't.

Again, I have been told that the comparison is not quite fair, because the money paid for supervision and for teaching in the high schools is included in the graded school totals. To which I reply that if the country schools had equivalent high school opportunities, and equivalent supervision, there would remain no specific country school problem of commanding importance. The question would very likely take some such form as, how can the town schools keep the pace set by the more fortunately located schools out in the country?

This leads to the last point of difference in this enumeration. There is no supervision of the country school work at all comparable to that of the town schools. Here, again, I am not comparing individual supervisors. In our state, I think it would be quite possible to match county superintendent against city superintendent, man for man, and play the game quite a while. Nor is it, as in the case of the working teachers, a comparison by groups. It is a comparison of the conditions under which the work is done. To illustrate:

I have in mind a county with an area of about 800 square miles, in which there are 156 isolated, one-room, one-teacher schools. Twenty-five of the school grounds are treeless, and twenty of the school houses are worn out. There is a city in this county large enough to require 114 teachers, and twelve school buildings. The city superintendent has a supervisor of music, and a supervisor of physical culture to

help him, as well as an office assistant the year round. The county superintendent had clerical assistance during the year amounting in cost to \$106. The difference in salary is \$500.00 a year in favor of the city man. Now this city superintendent has plenty to do. There are 5,231 children under his general care and direction. But in each of these twelve school buildings there is a principal with supervisory powers. He can call these principals together for consultation any day, and the whole body of 114 teachers as often as necessary. He can "call up" any building by telephone. He can take a street car and be at any school-room door within half an hour. At certain hours of every day, any pupil may be sent to him for "advice," or any parent may step into his office and advise him. He can set up a standard of excellence in reading, writing, and ciphering, in geography, history, manners, industry and punctuality, and can give these schools, and principals, and teachers, such encouragement as their various approximations to his standard seem to need. He can transfer pupils, misfit teachers, or even principals for the good of the service, thus keeping square pegs out of the round holes. In ways too numerous to mention, he may organize his great work for maximum efficiency. He is a superintendent operating under conditions that make it his own fault if he does not superintend.

On the other hand, the county superintendent, after incidentally examining 252 applicants for teachers' certificates, preparing for and conducting a ten days' institute, securing, correcting, and consolidating, for the use of the state, reports from his twenty-five township treasurers, giving a look and a promise to some of the twenty-six smaller graded schools, and performing a variety of miscellaneous duties required by the laws, found he had remaining just 134 working days in which to "visit" and otherwise supervise his 156 ungraded schools. The records indicate that he saw most of them, that the average length of time he spent with them was two hours, but that twenty-five of them did not receive even the two hours of direct oversight, or the few words of counsel and encouragement given the others;—counsel and oversight which to more than one young teacher may have meant all the difference between total failure and a measure of success.

These facts are taken from the record of a single county in a single year. They are typical, and illustrate the prevalent difference between the conditions of school supervision in town and country.

These four considerations, and what they imply, then, are in themselves sufficient to account for the mode of thought which places the country school in a class by itself.

The question is, what can be done to make common school advantages approximately equivalent in town and country? I use the word

equivalent, because it is neither possible nor desirable to make them equal in the sense of being alike in all respects. But a square deal for the thousands of children who must continue to live, and go to school, in the country requires that they shall be of equal value.

First, the farmers must put more money into their schools. Down in Illinois, the country teachers have almost gone to the limit in certain modes of self help. By such means as school entertainments, box, basket, pumpkin pie, and every other known variety of "sociable," by husking corn, or selling the products of the school garden, and I know not what devices, they have allowed the schools to earn money to buy books, window curtains, pictures, musical instruments, and to decorate the walls. They have planted trees and flowers, and even painted the school houses. The sum total of such work is very large, and it has influenced the schools in every county. I know of one country school in which the teacher and pupils, working together for a few years procured for themselves 185 books, two book cases; a globe, dictionary stand and music chart, a case for seeds, a hundred seed bottles, the lumber for a stage, a clock, an artificial palm, a carpet, several rugs, three tables, eight chairs, six drawing boards, six lamps with reflectors, bought and framed more than a dozen pictures, set up a work bench in the basement, bought a fair kit of tools, and made no end of things they thought they needed in their business. If all the country schools in Illinois, now doing for themselves things of this kind, were enumerated, the list would run well into the thousands. This form of activity on the part of the teachers in providing the minor school comforts and conveniences is very marked and by no means peculiar to any one state. The country school teacher who does not leave the school room and the school grounds a little better looking and a little better "provided" than she found them soon loses caste. This is a good sign, of course. Nothing could be finer than the spirit of the teachers who do these things, while their city sisters are filing charges against janitors who do not clean the chalk troughs or dust the drawing models.

But this sort of thing does not go to the merits of the case. The fundamental material requirement of the country school is a little spare room and quite a little more land. An acre is the smallest piece of ground, for even a one-room school, that is entitled to respectful consideration. On how much less can there be a lawn, some flower beds, a few fine trees, an ample play space, and a little school garden? In addition to two good cloak rooms, one extra room, on the level of the school room, rather than in the basement is the twentieth century minimum. The farmers cannot adopt this standard too soon, for long before all the little districts not foreordained to be "con-

solidated" are thus provided, there will have been formulated a body of knowledge available for elementary agricultural and industrial education, and teachers will have appeared who will need these conveniences in their business of teaching.

Such an enlargement of the plant would take a little money, of course. Well, the farmers have it. The entire national expenditure for schools in 1903 was but \$251,000,000. The wheat, cotton, hay or dairy products this year, any of them taken singly, come to more than twice that sum. The corn crop is said to be worth four and three-quarters times, while the miscellaneous farm crops, not including these staples, amount to more than ten times as much. Should all lands, personal property, all products of the mine and factory and field be declared non-taxable, and the products of the poultry yard alone, be confiscated for school purposes, the great American hen would pay all the expenses, in *both town and country*, and create a sinking fund that would replace all the permanent school property in less than three years. The farmer is entirely insolvent. Wilson says his savings embarrass local banks with their riches, and trouble individual farmers to find investments, leading to the multiplication of small banks for which they furnish the capital. He predicts that if there is no relapse within the next three years it will be found that the farming element, about thirty-five per cent of the population, has produced an amount of wealth, within ten years, equal to one-half the entire national wealth produced in three centuries, and concludes by reminding us that "we are still at the threshold of agricultural development, and that the educational work which has led to such grand results has only been extended as yet to a portion of our agricultural population."

Now a square deal for the country schools means that the educational work that has led to these grand results shall send its roots down deep enough to draw part of its life from the country common schools. It cannot otherwise become all pervading. The farmer has the money. He must put more of it into his schools and he must spend it in a wiser way. He is wasting a lot of it now. To illustrate: In Illinois, the average cost of teaching a child a year in the graded schools of the towns is \$14.91. In the country schools it is \$9.52. But the average number of days the town child gets to school is 158, which makes the daily cost per pupil a little over nine cents, while the average country child gets to school but 94 days, making the expenditure for teaching him a little over ten cents a day. The farmer pays his teachers less than half as much a year, but his teaching costs him a cent a day per pupil more.

There is no doubt that this waste will continue as long as the small

district persists. It involves not only the expenditure of a larger proportionate amount of money, but also a diminished amount of service, mainly due, as things now are, to the crowded condition of the program, and the lack of adequate supervision. In the near future this loss will be increased by the limited amount of work in the elements of agriculture and hand training that may be undertaken. The apparent remedy lies in such a reorganization of the country districts as will require at least four teachers in each school, whereby one could be prepared to teach the elements of agriculture and manual training, and another domestic science. These, between them also, could extend the conventional course of the country schools at least two years, while the other two took care of the grade work, as well or better than it is now done. Suppose the 100 schools to which allusion was made, and which were to be inspected in 134 days, were thus reorganized. There would then be but thirty-nine centers, and the efficiency of that part of the supervision depending upon the personal presence of the county superintendent would be increased three-fold. This alone might well become an equivalent for the increased cost due to this much reorganization.

Then as to teaching efficiency. It is my deliberate judgment, based upon observation, testimony and upon the nature of things, that almost any four teachers—without any better initial preparation—would in such a combination and division of labor, under the most mediocre leadership, accomplish more than the same four teachers working singly in the isolated districts.

I shall not dwell upon this matter of consolidation. There is a systematic propaganda of that doctrine in progress. The opposition to it has been intelligent and active. It has included sane reactionary elements which would oppose any proposition which seemed likely to improve the common schools,—and for that reason. It has also included many who believe that the ungraded country schools have certain advantages, at least, for the younger children, that ought not to be lightly abandoned. I have some sympathy with this opinion, as well as for the sentiment which still lingers around the little red school-house,—commonly painted white. Tenacity for the ancient landmark is not wholly a bad thing. But my sympathy has its limitations. If those who desire to hold fast to the old way will provide suitable buildings, well lighted, warmed and ventilated, furnished with libraries, museums, pictures, and a work-shop; if they will make the grounds ample enough for a garden, and flowers, and trees, as well as for play; if they will provide for the proper care of the building and grounds without imposing this form of service upon the teacher; if they will keep the school open eight or nine months a

year, pay the teacher living wages, see that she has a comfortable boarding place, and otherwise encourage her to remain in their service,—then, upon one condition, I am willing to concede that their way is as good as anybody's way, until they get ready to change it.

That condition is this: Some provision must be made for more advanced country schools than, under the most favorable circumstances, the one-room, one-teacher school can possibly be or become. If the Wilsonian "educational work" is to be extended to the whole agricultural population, it must be done through the agency of schools in the agricultural communities. The country schools will not be organized for maximum efficiency until there is, within reach of every farm home a common school, of secondary grade, in which instruction is given in agricultural botany, chemistry, physics, general agriculture, blacksmithing, stock breeding, and feeding, and judging, dairy husbandry, farm engineering, cooking, domestic chemistry and hygiene, farm book-keeping and the like, as well as a little more language, literature, mathematics, and history for those who want them. This means that there must be country high schools which will affect the country elementary schools very much as the high schools now affect the grade schools in town, and also that these upper schools will articulate themselves with the agricultural college at the university very much as the city high schools are now articulated with the other colleges. With a sufficient number of accessible schools of such type, it is not impossible to concede that "consolidation" of the elementary schools is a detail which will take care of itself. Its chief value is that it is in the direct line of approach to the main thing,—which is some better provision for a rational course of study for, and mode of instruction of, the older children in the country districts. As thus rudely stated, all this may be far from our ideal of what the country school should become. But it does represent an advance, and I wish to keep quite within the bounds of what is both desirable and possible. It will be said that even this much implies a preemptory demand for special preparation on the part of at least half of the country teachers, and better preparation on the part of all of them. Well, what are you already doing in Dunn county,—and Marathon? The most suggestive pioneer work in the special preparation of county school teachers of which I have any information. Set up even the modest standard which I have indicated, and such schools would multiply in response to the demand for teachers with some notion of how to go about their work. It is up to this representative educational body, to reinforce all the agencies now in operation to create the demand for more rational school

conditions in the country. One way to stimulate the demand is to increase the supply of teachers. This is a matter in which demand and supply act reciprocally as cause and effect. Each reacts to produce the other.

Lastly, either the consolidation of schools, or the establishment of country high schools, would do much to liberate the county superintendents. The smaller number of centers, for one thing, would give them more time at each. In the consolidated school, part of the supervision would fall to the principal, and another part would be done through him. In the other case the schools tributary to the given central high school would be influenced, guided and inspired,—led, if not directed by the school next above them. But this relief, alone, would not fully emancipate the county superintendency. There should be more of it; it should be much better paid; and it should be so conditioned as to attract the best men and women in the school business. No city of six thousand ought to be prepared to compete with a county for a school superintendent. Under anything like normal conditions, no city of that size could offer superior attractions,—financial, or otherwise, to a superintendent, in robust health, and having an adequate conception of the comparative possibilities in the two opportunities. There is a wonderful field for initiative in the supervision of country schools, even under present conditions.

But if the office is in politics, or open on equal terms to butcher, baker and candle-stick maker, provided he can get the delegates, we must expect a certain residuum of men wholly without initiative or other qualities of great value to the schools.

In part of what has been said, I have wished to make you conscious of the presence in my thought of the value of the economic motive in school methods. The social unit is the home. A man's choice of, and success in, his vocation determines the quality of his home,—or whether he shall have one. His home, in turn, determines his rating as a social factor. Hence the school is bound by its obligation to society to help train the young to feel, as well as formally to know that labor is of dignity just in proportion to its utility. The modification of school methods to include that motive is in progress right now. The introduction of active occupations as educational instrumentalities, not in lieu of books, but in wise relation to them, is strengthening the foundations of our educational processes. When the farmer clearly apprehends that there is a kind of training that will increase the productive capacity of his boys, that there is a kind of school education that they can use in their business, he

will demand that kind, and plenty of it, in the farm schools. Very soon thereafter there will be something doing out in the country.

But there is no inherent difference between right school methods and standards in town and country. It is good pedagogy to use the material next at hand for educational stuff. So there will be surface differences, due to environment. The real process is the same everywhere. While conditions remain substantially as they are, some country people will continue to move to town to "educate" their children, and others will send their children to town to board, and pay tuition, and go to school. This is a free country. So we cannot stop that. But if all country people who are doing one or the other of these things, would stay on the farm, and put their shoulders to the wheel, and lift their weight, and push, they could hasten the good time coming, when the advantages of clean air, elbow room, trees, wild flowers, babbling brooks, and all the other country agencies and elements of bodily health and spiritual freedom, not the least of which will be the new country school, shall have set up a counter current. When that time comes, as come it surely will, we also shall see quite as many city people sending their children to the country, to live, and grow strong and incidentally, to pay tuition and go to school.

THE TEACHER'S DUTY TO SOCIETY.

Dr. Ralph Elmergreen, Milwaukee.

Body and mind are the components of organic life. The ultimate structure of the dynamic body can not be circumscribed. From chlorophyl to protoplasmic cell wall; from the sea urchin to a Venus de Milo there is but a series of morphologic stages determined by kinetic forces.

The potential mind recognizes no limitations. From the clinging of the vine tendril to the armless motions of the amoeba; from the nest building instinct of the swallow to the architectural conceptions of a Ruskin, we find but one uninterrupted evolutionary chain studded with progressive multiples of sense impressions.

The scientific training of the body, and the wise inhibition and proper stimulation of the mind is the mission of the teacher. To accomplish this, a practical knowledge of the principles of psychic evolution, and a scientific acquaintance with the laws of health are imperative.

The growth and development of the child, to-day, engages the attention of our foremost thinkers in every department of intellectual labor. It is, therefore, fitting and eminently proper for me to bring to the attention of this splendid body of earnest men and thoughtful women, peculiarly fitted by years of training and observations, the present socialologic and economic status of the child.

The child is the most valuable asset of the state. His relative potentialities for good and evil determines the ultimate fate of the state. Every improvement in the child's body and mind, and every additional safe-guard thrown around him to increase his immunity from disease, and strengthen his resistance to temptations, is an economic gain to the state. Whatever elevates the child, morally, physically, and intellectually, elevates the state, what reduces the child, degrades the state.

The individualism antagonistic to this sense of paternalism is inimical to the best interests of the child, and destructive of a state's solidarity. The teacher, like the sanitarian should ever with caution indulge in political doctrines, and sectarian creeds that set personal liberty above the moral, physical and intellectual welfare of the child.

The teacher is an officer of the state, engaged to mold the plastic mind, the immature body, and the unawakened moral sense of the child into good citizenship. His office is a sacred trust. The teacher, the guardian; the child, his ward.

In a conflict of interest between teacher and parent, the latter must learn to yield, because the state's interest in the child must ever remain coordinate to all other interests. The end of all education is the making of a good citizen. The good citizen must be physically, morally and intellectually strong.

It follows, therefore, that the teacher's responsibilities are, indeed, onerous and exacting. And as these responsibilities, in the light of advancing science, multiply, even so should the teacher's authority and influence be augmented, so as to cover every possible contingency. Honor and preserve the dignity of the teacher's noble calling and the child is the gainer; brand the teacher, and permit the child to compass his teacher's authority, and the state is the loser.

Raise the teacher to the plane occupied by the public educators in the most enlightened age of Pericles and you endow citizenship with Periclean virtues. Lower the teacher's power and influence to that of the servile tutor or obsequious governess and you invite physical degeneracy and mental deteriorations. In other words, add to the teacher's power and you build up the citizen, subtract from that power, and you tear him down.

Fellow teachers, we are living in a glorious age. The years yet within the compass of our memories have seen great progress in your profession and in my profession. Rich and beautiful is the heritage of posterity. Let us toil on and make the child worthy of his affluence.

Where there was darkness, we now begin to see light. Where ignorance and superstition were wont to reign, we now hear the assuring footfalls of science. The sign, "No thoroughfare" no longer obstructs the teacher's avenues to the child's mind, and the laws of sanitation and personal hygiene will open wide the portals of health.

With the light of our immediate past to guide us and science to inspire us, let us press on fellow teachers, and wage war on the excrescences that ever follow in the wake of material progress.

With the child in our arms and the microscope in our hands, let us join in the glorious crusade against ignorance and vice. Let us not waste our ammunition in petty strifes, and discharge our broadsides on ephemeral political evils while remaining blind to the overtopping corrupting influences of the orgies that hold high carnival right under the shadow of the law's domicile. Let us no longer turn

a deaf ear to the disease breeding and death dealing influences that now obtain in the public and sectarian press. The criminal and lascivious advertisements of the rapacious patent medicine vultures, and public-deceiving pseudo-medical institutions spread more evil in one day, than the worst corrupting influences of any political machine can cause in a year.

I talk to you from the personal observations of the physician. The cardinal evils of to-day can be fought with science alone. And you, brother teachers, who left all political ambition behind when you stepped over the threshold of your school room,—you are the chosen instrument to whom science looks forward for spreading her gospel.

The press will give you but scant aid, as she is no longer an educational institution interested in the economic welfare of the human race. Our strenuous political life gives the editor but little time for reflection. The sensational vaporings of a recreant clergy, or the devious course of the mushroom politician receive more attention from him than he bestows on the great questions of preventive medicine and municipal sanitation.

And the law—the elusive, fickle law, ever following in the wake of musty, hair-splitting precedent, with her host of counselors,—in theory, officers of the court, in fact, the retarders of justice,—the law and her lawyer have never raised one finger to protect the child from disease, vice and pseudo medical frauds. Aye, the law that should act and hasten the execution of the sanitarian's orders, is still compromising and procrastinating. And though tuberculosis in all her hideous forms and kindred infectious diseases have invaded well nigh every school room in the state, yet the law hesitates in choosing her course.

Therefore, good teachers it devolves upon you to act—to remember your duty to society. In you the sanitarian's hope is centered. You must no longer be limited in your action by precedent, but you must seize your opportunities and prove yourself equal to your responsibilities. Disease and pseudo-medical impositions can only be fought through the instrumentality of a widespread, wholesome education. The ubiquitous germ ever lives in darkness and ignorance, and draws its sustenance from the vice and patent medicine bottle of a humbug-ridden public.

However, fellow teachers, let me hasten to assure you that you shall not alone bear the burdens of society. The physician, as he ever was in the past, is in the present, and shall be in the future, your support,—your exponent of enlightenment.

Here, indeed, is the altruistic calling of preventive medicine and sanitation you shall find an intellectual oasis where truth reigns supreme. The evils that predominate in all other professions here are but the barnacles delaying the progress of the armored ship of science.

The sanitarian, more so than any other man, is worthy of your every confidence. He is your friend. He stands ever shoulder to shoulder with you striving for all that is good; all that counts to the child, to society, to the state; all that is worth while when everything is said and done and mortal mind again turns to the mysteries of protoplasmic immortality.

Teachers, this is your opportunity. Your profession makes you the chosen disseminators of science. Go forth and teach what you know. Through the child enlighten the parent. Disease, both physical and moral ever haunts the darkness. Focus the light of your intellect on the cause of evil and the remedy will suggest itself.

As your faint light in the darkness grows brighter, you will see as clearly as I see now that every tuberculous child is a reproach to the teacher; every weakened eye, every curved spine a silent charge against the teacher; and every moral lapse of the child an arraignment of the teacher.

This may well set you to thinking, to pause and ask yourself, are we then, too, the keepers of the child's health and his morals? Is it not enough that we train the mind, must we too share responsibility for the invasion of disease and the aggressions of evil? I answer you through the light I see, Yes, yes, you must. You must indeed share every responsibility here with the physician. This is a duty you owe to society. In the heart of the true teacher it is a privilege, a great privilege. You can not burden the uneducated, overworked, often disheartened parent with the responsibility, as that would place the child of the poor at a disadvantage.

It was Horace Mann who told us that the former is immeasurably superior to the reformer. And because this is true our ephemeral statesmen die with their death, while a Froebel and a Pasteur live forever.

In the education of the young, be not misled by the seductive charms of reformation. Reformation in every department of intellectual labor, and at every stage of social, religious, and economic progress, has not only been barren of results, but actually aggravated the conditions that gave it birth. Were it necessary to illustrate, I could point out to you the centuries of reformatory tinkering with the rights of our English forefathers until the barons wrung

the great Magna Charta from King John, or, to come nearer home, I could remind you of the religious intolerance of our Puritans; yet driven out of their own country by that very bigotry. Or I could cite to you the intellectual inhospitality of the exponents of every reformed system of medicine for the cure of disease from decoctions of lizards to Perkin's tractors; how it remained for a Pasteur to leave the beaten paths and point to the microscope for a solution. Or I could tell you the long story of centuries lost in reforming old methods of reasoning until a Bacon was born, boldly to strike out for himself and form logical methods of thinking.

You must shape public sentiment when you recognize an evil, not shift it. You must root out and destroy what is wrong, not compromise. You must be positive in directing views of health, honor, truth and purity, not negative. You must take the initiative in your discipline of the child, teach him by precept and example what is righteous to the soul, elevating to the mind, and wholesome to the body, rather than correct lapses in the child that owe their birth to your neglect.

Your atmosphere, and the atmosphere of the school should be a stimulant of all that is worthy, and a repressant of all that is vicious in the child. In other words, you must FORM the child rather than reform him.

In closing, some time fellow teachers, let me beseech you ever to bear in mind in the discharge of every duty you owe the immature in mind and weak in body, be that duty parental, pedagogical, official, or wholly friendly,—still bear in mind that the home, the school-room, and the world at large are not reformatory institutions. Let the daily acts of your life so appeal to the child, and let the light of your intelligence to shine upon his plastic mind and frail body that you form him—make him bodily and mentally strong, immune to disease, invulnerable to temptations.

THE MAKING OF A RURAL SCHOOL TEACHER.

Cora M. Hamilton, Macomb, Ill.

A typical rural school district in the Northwest Territory includes four square miles of land, either adapted to farming or heavily wooded, inhabited by from ten to twenty families.

This population is made up of three classes of people: first, native Americans; second, descendants of naturalized foreigners; third, recent immigrants from the old world to the new.

The native American is acquainted with the aims and institutions of self government and recognizes the value of education as a factor in political freedom.

The descendant of the naturalized foreigner has become imbued with the American spirit and he, too, places a high value on school privileges.

The recent immigrant, on the contrary, regards this country as the land where opportunities to acquire property are much greater than at home, and seeks to make the children wage earners at the earliest possible time. Thus he regards the public school as antagonistic to his interests and has little concern as to its maintenance or management.

The degree of this indifference will be proportional to the regard extended to education in the country from which he comes. The immigrant from Norway or Sweden knows that at least a rudimentary education is necessary for it is the boast of his country that there is no illiteracy; the German has the school going habit ingrained, and while he sometimes feels the reaction when education is not absolutely compulsory, he may usually be depended upon as a friend to the schools. The Swiss is always a student; immigrants from the other countries of continental Europe fail to understand social and political institutions and are indifferent to school advantages. Especially is this true of the peasantry from Russia, Austria and the Balkan provinces. The exception to the general rule is perhaps the Irishman, whose quick wit teaches him, that though there was little schooling demanded at home, here "knowledge is power" and he hastens to give his children the advantages the public school affords.

Any school district may contain several or many of these types,

making a lack of unity in sentiment which may seriously interfere with the success of the school in any particular locality.

Again the rural school district is isolated from such sources of culture as the public library, the lecture course, the art exhibit or club life which make up so large a part of general education in urban communities. There is lacking, too, the constant contact with many other minds which serves to keep the intellect alert and progressive.

Even the advantages of rural delivery, trolley systems and telephone lines, now rapidly penetrating many localities, cannot entirely compensate for the social loss sustained by isolated families.

This very isolation tends to generate social selfishness and narrow prejudices, centering the attention on local issues rather than upon those related interests common to the world at large.

Because of these conditions the school must stand for much more in the rural community than in the town. It must constitute itself a social center as well as a place for instruction. As such it must build up sentiment for American ideals of education and conduct among those foreign to her customs; must furnish to the community in some degree that which library, lecture and art club give to the dweller in towns; and must in addition spread among the people of the district information regarding those social, industrial and scientific movements in the world at large which so strongly influence human life and history.

In the school the teacher must of necessity be the originator of all these activities and therefore needs a more far-reaching, though possibly less intensive preparation than any other class of teachers.

The kinds of service the teacher must render in the rural school are three: social, inspirational and practical.

Under the head of social service comes the organization and direction of such clubs and societies as may be formed in the district. The teacher must know how to build up a parents' meeting; to suggest topics for consideration and keep the discussion in the channels most helpful to the school. She must know how literary clubs are managed so that the young people may have the advantages that come from service in such work, giving them effectiveness, ease and independence in public meetings in later years.

She must know what the City Improvement Clubs have done that she may encourage a District Improvement Club which shall begin its efforts by beautifying the school house and reclaiming the school yard.

She must know what the state university is doing in practical lines for the farming community and in connection with its department

know how to organize and direct the Boys' Agricultural Club which ought to find hearty support in any district.

Again she must learn how a local traveling library which shall be a wellspring of joy to each home where English is read can be obtained. She must know what books to choose and how to provoke that contagious interest that returns a book from its circuit showing signs of much use.

Where shall the teacher receive preparation for all these social duties? For the parents' meeting there are now published many small volumes showing what to do, how to do, and pointing out a wealth of material for exactly such work. The teachers' meetings and institutes under the direction of the county superintendent are a fruitful source of suggestion. Here, too, the inspiration for the Agricultural Club is found, while teachers' journals offer much valuable advice.

The daily papers and current magazines are full of examples of what can be done along lines of district improvement, while the Federation of Women's Clubs is asking for chances to aid the inauguration of Library Clubs.

It is perhaps for the work of the literary club that the teacher needs most thorough preparation. Here she has the opportunity of opening new lines of thought, stirring up active debate and of cultivating all that is best in the community life. For this there is no better preparation than to have been an active member in a literary society connected with some well managed school.

Beyond this, she ought to be acquainted with some of the simpler texts on sociology or have come into personal contact with those of broad social experience. Such women as Jane Addams or Ellen Starr often appear before teachers' conventions or church associations, telling the story of Hull House; Graham Taylor comes to tell of Chicago Commons while Brooks of Harvard stirs the heart of every listener with his story of what the Consumer's League is doing to lessen sweatshop work and child labor and to improve the conditions of those who serve behind counters that we may receive courteous service.

Throughout the great Northwest the Chatauqua meetings are providing opportunities to hear how "the other half lives" in the great industrial centers where are made the cloth we wear and the tools we use.

Through observation, reading and conversation the teacher may fit herself for the social side of her work but she would be still more

fit if in some good school under genuine leadership she might study the question of sociology from its philosophic view point.

In any case ignorance of the great social movements which determine the history of our time, cannot be excused. Russia is to-day, to the most superficial reader, a glaring example of the want of social relations and service among her people.

Knowing the social conditions at home and abroad, the teacher may more easily find means to mold into unity of thought and action the various classes and nationalities she finds represented in her district.

In order to be an inspirational force in her school and community the teacher must have felt the force of such inspiration upon her own personality. It is only when she realizes the consecration of lives like Froebel's and Pestalozzi's to the cause of better methods of education, that the scope and importance of the work upon which she has decided, really enters into her consciousness.

When she comes into contact with the speeches or writings of such men as Stanley Hall or our own lamented Parker and Tompkins, or with a woman like Sarah Arnold whose love includes all childhood, then indeed she has received her baptism of fire and earnestly desires to be to some other soul, in some small degree, what these leaders have been to her.

All such preparation is possible to any individual who thirsts for it. It depends solely upon individual effort. It is when she turns to the practical side of her work that the school forces come more largely to aid the preparation of the teacher. She must realize in the beginning of her training that the knowledge of the one who teaches must be many fold greater in any given subject than the portion of the subject she teaches.

Is she to teach reading? Then the whole range of questions concerning it come up to be answered in her study. How does a child master the symbols of speech? How shall waste of time and effort in the mastery of the written page be avoided? How shall one proceed so that a printed page shall set a procession of images marching across the mind's retina? Out of all there is to read how determine what is most fit for any particular class of children? How shall the child be led to use his own experience to interpret the experience set down in print? Given the power to interpret the symbol what will so aid the oral expression as to set astir a like procession of images in the mind of the hearer.

How shall the teacher train herself so that as she reads to the listening group, they shall feel the power and importance of making one's self understood by those who hear?

Literature, the record of what the race has thought and felt, has within itself the power to awaken desire, spur on to action and to lead to ultimate victory the individual who truly sees its real nature.

In order that her pupils may feel this influence, she herself must be brought into contact with the best thought of the ages. She must see it in its relation to the life and times that caused it and its bearing on the life that came after it. The myth, the evolution of man's childhood, whether Greek, Roman, Norse or Indian, must, through her, minister again to childish minds. Fable and folk lore the natural heritage of child life must not be denied.

She must learn to find in Shakespeare a reflection of the life in court in noble's castle and humble peasant's cot, that deeper philosophy of human life and thought, just as true and applicable now as when the plays were written. Then when she finds in a school reader a bit from the Merchant of Venice, a quotation from Julius Caesar or an allusion to Falstaff, she can make the dead words assume living forms and become real things in the great realm of child mind.

So, too, with Wordsworth she may lead her children to Nature's choice secret; with Whittier and Lowell may introduce the charming characters that live in poet's pages. As with the pure Knights of the Table Round, the light of the Holy Grail may greet their vision if it has once shed its radiance on her.

Perhaps the teacher in the school must set her feet in the path and point the way but when the consciousness of the wealth awaiting has once dawned upon the individual she can do for herself a hundred fold anything the school can do for her.

Is it history that she must teach? Our national history is only a chapter of the record of all time. How shall the teacher be able to appreciate the value of events in American history unless she has had a view of the great whole of historical record. Until she has learned the force of the great ideas which have governed the world's action and for which men have suffered and died; until she can look across the ocean and feel that kinship with the Teuton so markedly shown in our physical make up, our modes of thought and plans of government, she can not teach the part as a living thing.

Here again, the individual must get the impetus from a school. She must learn the sources of historical information and methods of research there, but when that has been done, it is individual effort that completes the preparation.

If Geography is the topic the research going on all over the world is recorded in easily accessible books and papers. To comprehend

the meaning of what is written she must know the changes the earth has passed through as written on the rocks and in deposits; must see the results of the great forces reducing the elevations to the level and filling up the sea.

She must learn the adaptation of life, both plant and animal, to physiographic condition and see how man has been able to modify those conditions so that he may live with more ease. She must see how mighty cities came to be where they are and the steps by which great industries have been built up. She must see the relation of these industries to the life of the people and to the great system of exchange of commodities that we call commerce.

Looking up from the earth beneath her feet she must see this earth as only one in a mighty army of shining worlds swinging in their great orbit around some unknown sun, marshalled at the behest of the Mightiest who made them.

Not till the vision of the earth and all that in it is and of the heavens over the earth has broken upon her, is she fit to teach geography to the humblest pupil in the smallest school.

In this field, too, is science, physical and biological, the voice of the Creator speaking to his people in flower and stone, in animal adaptation and in storm and calm.

When science is showing how worn out land may be made fertile; how the range of products in any given locality may be increased; how a plant may be made to yield more of given constituents necessary to man's use; how to eliminate evil organisms and increase the good, the teacher must be one of the mediums through which practical knowledge of such scientific research must reach from the university to the man who needs its applications in his daily labor.

The teacher must know the best means of conserving life and energy. She must not only know the general facts of the effects of narcotics and alcoholics but she will know further what fresh air and nourishing food will do to stamp out the "great white plague," and will find many common sense ways of preventing the spread of ordinary epidemics in the locality.

In the study of mathematics, the range of knowledge required is narrower but such number knowledge as applies to life is essential and that knowledge must be absolute. Given the principles of the subject with concrete illustrations and she may prepare herself to measure or divide a field, calculate the material needed in building a house and estimate its cost, decide the capacity of crib or cistern, but not necessarily be able to tell what fraction of a grindstone the neighbor must grind off for his share nor judge the comparative value of the leaps of a hare and a hound.

She must know, however, the pedagogics of the subject and be able to compare the value of the various methods of cultivating number sense and power presented by those who are working out such methods by careful experiment.

Since man expresses himself in many ways besides articulate or written speech, it follows that children should be instructed in the art modes of expression. For this reason the children must have at least elementary acquaintance with drawing for purposes of illustration, with the possibilities of simple color and with clay modeling as a means of vivifying and expanding mental concept.

Closely following these art modes is that more common means of expression known as "making things" or manual training. The teacher needs to know the possibilities for service latent in such materials as wheat straw, long grasses, willow twigs and roots, odds and ends of lumber, paper, cardboard, yarn, bits of cloth and various other materials to be had at an expenditure of much effort but certainly of little money. She must see how "making things" the stirring up of the creative instinct in the child's mind, is a vital means of growth in power.

Nothing so unifies a school or community as the habit of singing together. Music is the universal language and if of a high order makes a powerful appeal to the better nature of mankind. Our teacher must therefore be prepared in music. She may not be able to sing a note but if she knows how to read music, use a pitch-pipe and beat time she can set a whole district singing.

Finally she must be trained in school management and discipline. This involves the study of the child. Until she can appreciate the motives and temptations, the strains and stresses of child life, she is not competent to decide how to deal with cases as they come up in the school room. Greatest of all she must learn to love children with that all compelling love that irresistibly draws childish hearts to follow the guidance of the real teacher.

Having decided what preparation is necessary along this practical side of her work, the question arises "Where can this training be had?" The answer is plain it seems to me. By the very constitution of its courses and equipments, the selection of its faculty and the opportunities of apprenticeship to real teaching it offers, the State Normal School fulfills all requirements. The expenses connected with attendance at such an institution are reduced to the very lowest amount commensurate with healthful living. The tuition is either very small or absolutely free.

In all the teaching in such a school the pedagogic point of view

is emphasized, rendering its work quite different from that of the college or university. In the training school the student has the opportunity for the study of children and the observation of methods such as no other school gives.

All these opportunities are offered in vain unless the student realizes that she acquires knowledge and training so that life may be more full and abundant wherever she goes. But if this conviction has taken deep root in her mind, she may fit herself for her work in no mean degree, even though cut off from school, through books, magazines, papers, teachers' meetings and local gatherings in her neighborhood. I lay it down as a general warning that no student graduating from an eighth grade of a rural school is fit to become the teacher of that or any other similar school until she has broadened her culture and experience by contact with the social and educational forces of some other locality. It is commonly fatal to the best development of the teacher herself and a distinct narrowing of the mental horizon for the pupils of the school.

In the final instance it is what she is in personality that counts. We have a right to expect courtesy, good taste, honor and conscientiousness in the teaching of children. In all these personal details she must awake respect for herself if she wishes her teaching to avail.

I am accused of bringing before you the ideal. Let me quote Henry Van Dyke when he says "It is better to follow even the shadow of the best than to remain content with the worst."

Suppose there go out into the schools of Wisconsin each year a few inspired, trained teachers. May we not hope that according to the Scripture, "a little leaven may leaven the whole lump?"

Miss Philura, remember, in that inimitable story, learned the new philosophy "Believe that you will have and you have." One of Wisconsin's own distinguished students teaches us of the power of mental suggestion. Why, then, shall not you and I believe the ideal until we bring it to pass.

EDUCATION OF THE WORKING CHILD.

Thos. Morgan, Chicago, Ill.

I thought when I started for Milwaukee from Chicago that I was going to arrive in daylight, but I find myself in a sort of a dim religious light. I would have preferred to have had an opportunity to talk to you more freely and not be bound so closely to the subject matter or theme, but I am here to fill the place of another and must adapt myself as much as possible to the situation.

Miss Lathrop is an acquaintance of mine and I regret very much to hear that she is sick and am sorry that a better representative has not been chosen to do her work.

The subject matter that has been given to me and has been treated hurriedly, is to educate the working child.

In the few minutes at my disposal my reply to this question must of necessity be:

It may add value to what I say to explain that my thought on this subject is evolved from personal experience and observation during more than 50 years, over 40 of these years being passed in the environment of the average working child and workman. My study while not so long as my experience, includes the educational experience of a grandfather passing over from the wageworkers into the legal profession, and that of a workman expressing his thoughts before several educational bodies; participation in the fight over Fads in the public schools and membership on a committee, selected by the Civic Federation to examine the system of public Education in Chicago.

With this peculiar preparation for the discussion of this subject, I am impressed with the idea that the first thing to do is to touch briefly on the existing system of educating the working child.

About 80 per cent of all children that pass through the public schools are children of wageworkers. Over 75 per cent of these leave the school between the fourth and fifth grades; I might say that the average in the cities is larger than that in the country. The average school life of this percentage is between 300 and 400 days. During this short school life, they are enrolled in classes of 50 or more to be taught en masse by one teacher. The dominant influence in the schools requires these teachers to so prepare the children that they

will be of some use as industrial or commercial instruments to be operated by some master, manager, superintendent or foreman. The whole educational end and aim being to turn out children that will be of useful value in some kind of wage service, children well adapted to become animated tools and cogs in the machinery of modern production and distribution in which automatic response to commands is more desirable than independent thought and action.

The teachers of Illinois gathered in the Capitol of that state not long ago. The Governor delivered his address and in response to suggestions in the editorials and news items of the educational proceedings said that all efforts must be in the direction of teaching the child how to get a living and that automatic response was more desirable than individual thought and action.

I was a worker in one place for 18 years in the Illinois Central Railroad Car shops and when I, an old mechanic, sought to inject into the mind of the apprentice to think and act accordingly, the foreman would say, "I will do the thinking, you do as you are told." I used to get into lots of trouble. You can see my temperament. I did things that were not on the program. I did not have the opportunities our children have now, but I went to night school and to Sunday School; I was in my bible class at seven o'clock on Sunday mornings after I was a married man and I was not taught superstition.

Modifying the extreme effects of this dominant influence is another which seeks by the introduction of what are called Fads into the public schools, to enlarge the mental processes of the children and thereby produce better instruments, tools and cogs. This modifying influence is supplemented by the establishment of evening schools and classes in social settlements and elsewhere whereby the exceptional working child is sharpened and polished and thereby improved as a tool or stimulated to efforts to escape from wage service into professional service.

Enveloping these influences is a heavy cloud of superstition, which produces mental paralysis, exaltation or fear and in which the realm of safety appears to the worker to lie in humble obedience to, and reverence for, dominant authority and in stupid ox-like content. Under all these influences the worker's child passes from infancy into maturity in which the effects of this kind of education hardens into the average wage worker, whose present mental status has suggested the question "how to educate the working child."

The answer to this question must necessarily be of a general character, in which the full meaning of the word "educate" and the status of the worker's child form the essential elements together with the

original conception of those who formed the public school system, relative to the subject and the object of our discussion, The American Child.

In the ordinance of 1787 the revolutionists proclaim the need of education as a necessary means of maintaining this republic and they provided what they thought would be a means of permanent support for the desired education by setting apart every sixteenth square mile of public land in the great Northwest territory and a whole township of 36 square miles for the support of a state university in every state thereafter formed.

The state of Illinois accepting this endowment declared in its constitution that the general assembly of the state should establish and maintain a system of free schools in which all the children of the state could receive an adequate free common school education. The Supreme Court subsequently declared that this constitutional order was mandatory and that there were no litigations upon the agencies which the state might employ in carrying out this order. The general assembly in 1825 enacted a school law, fixed the school age at from 6 to 21 years and in the preamble thereto declared that the mind of the child was the common property of the state and therefore it should be developed to the highest efficiency possible.

I find no reference to our fundamental law, National or State, on the subject of education, relative to a working class or to working children, while the words all and common are inclusive, embracing all children in the common need of education. The idea of adapting and limiting the means of public education to working children has grown up with the separation of Americans into distinct classes and every move along the line of special limited education for working children is a step towards the destruction of this republic.

The dominant thought and purpose of the revolutionists who had carved a republic out of monarchical despotism when they made the grant of land for free schools was to so educate future generations of citizens that they could think and act as the revolutionists had and be ready and competent as men to rule and govern themselves and to successfully resist all individual or class rulership from within and without, and thereby reserve and develop the republican institutions which independent thought and manly courage had established.

Every teacher in the land, every wage worker, every man, woman and child, should read and understand the article on "Education" in the United States Government Report of the Commission on Education, Vol. 1, 1893-4, in which the purpose of our public education is set forth in the clearest and most courageous manner. The education

of children to become wage workers and instruments for some greedy employer is denounced in the strongest language and against all narrow and limited use of education. The writer sets forth the purpose of education to be the production of men and women capable of performing all the functions of private and public life. Citizens worthy of sovereignty and capable both of governing and being governed. Men and women educated to stand erect, to look mankind full in the face without degrading humility or fear born of ignorance and conscious mental inferiority. Men and women prepared for the refinements of life as well as for the work of life, free from all shame of mental nakedness. All education that falls short of this for the working child spells Social reaction and national ruin. Nothing has been more embarrassing to me than the lack of refinement. You may ask me, how did I educate myself. Let me tell you. I was fortunate. I drifted into a metal works in which fixtures for old castles in the old world were manufactured. We had to take the architect's drawings—we had to think them out—develop them, so our mental faculties were at work and then fortunately, I only had to work eight hours a day during the latter part of my life. If a man's brains are not educated to think, he cannot be capable of commanding.

If you want the child to be educated, reduce the hours in the factory and then bring them into classes where they can learn and can comprehend the situations which present themselves through life, rather than to exercise the higher duties that men have placed upon them intellectually.

How far the people of this nation have moved in this downward path is written so plainly in the industrial, social and political conditions of our great cities, that all who run may read.

See the worker's child, born in a tenement, raised in a workman's district, one of 50 or 60 children crowded in a schoolroom with one teacher, taught for the period of 300 or 400 days, then turned out of school into a shop, factory, mill or store, to become a part of an automatic machine, called in the morning, ordered and moved during the day by the will of another, dismissed at night, back to the tenement. The saloon, the cheap or free vaudeville the only place of recreation and then behold him at 21 years of age at the ballot box with the destiny of this republic in his hand. What a product of this enlightened republic. We have but to look on this sovereign citizen so produced and so educated and to compare him with the revolutionist whose bleeding feet stain the snows of Valley Forge, to find the answer to the question asked of us here today.

THE STATE AND DAY SCHOOLS FOR THE DEAF.

E. W. Walker, Delavan, Wis.

President McLenegan has very kindly asked me to give to you the views which I presented to him, of the proper relation between the state and day schools for the deaf, and it is with pleasure that I do so. In spite of what our press friends sometimes say and what people frequently believe, there is no personal hostility, to my knowledge, between the state school and the day school interests. At the St. Louis Convention of Superintendents of State Schools of this country, I happened to be the only one of that group that stood up and advocated day schools. I believe in them; I would not if I could, and I could not if I would, lessen them in the State of Wisconsin. We cannot take these children at the state school, and in many cases—most cases perhaps—it would not be wise to take them if we could, as we are already crowded.

That much by way of introduction, that you may not misunderstand me. We do honestly and sincerely disagree on certain notions as to methods, and I want you to see that side of the situation; but understand, we are not and should not be fighting each other.

We are simply trying to blaze a way, to do more and more for the deaf boys and girls of this state; and I want you to see that there are two classes of deaf, widely divergent, those born deaf and those who have become deaf after being partly educated, or who were partially deaf.

The first class is not only one that cannot hear, but it is made up of people that cannot think in audition impressions. The other class is made up merely of people who are so hard of hearing that they cannot be properly instructed in the public schools, or people who did once hear and still think in audition impressions. The problem of reaching the second class differs from the problem of reaching the first class.

Because these two classes of deaf exist, two widely separate methods have been devised for teaching these deaf minds. One is known as the manual method; it is the language of finger spelling by which one spells upon his fingers the words that he would convey to the deaf. As a supplement to that, and especially with the younger

deaf there is a crude language of natural signs that is frequently used. This is the system devised by the French and is the first system ever used. Its advocates claim for it that they can reach the mind of the deaf clearly and perfectly; that it teaches the use of the English language better than any other method. They agree at once that it does not teach speech and does not teach lip reading; they claim, and I agree with them that very many deaf people cannot properly be taught speech and lip reading. In the first place, lip reading requires great accuracy and the strongest eye cannot watch the speaker for a long time and read the lips, except in a few cases; while those of imperfect vision cannot read the lips at all. In the case of many of the deaf, speech is so poor that it is not fair to call it speech. I have in my school today a deaf boy who has been in one of the day schools six years. He can say "Mamma" but cannot yet say "Papa." Now he can be taught, but he cannot be taught to talk, as you and I understand it. I understand speech among the deaf to be enough speech to convey thought; sufficient at least to carry on simple conversation.

Now the other method of teaching the deaf, and which arose largely from observation of those who are adventitiously or only partially deaf, is the oral method. I firmly believe in that. It is a blessed thing even if a child cannot converse very freely, to have him able to say the words denoting articles on the table, things in the store, names of railroad stations, etc., and many of them need not stop there. But what I want you to see is that that does not reach the child's mind in the fullest and best way. Now the oral method calls for the child to get thought from the lips, teaching him to articulate in return. The advocates of that method claim that it permits the child to mingle more freely with hearing children, and it certainly does, and therefore it is a blessed thing. The orally taught child, if he never heard, is apt to deceive you unconsciously as to his attainments. He can pronounce words. He gets words from your lips because the elements have been drilled into his mind, but he does not necessarily clearly understand them. Very frequently a sign helps out the understanding. But all I want you to see now is that that method devised by the Germans years ago, followed by them for a long time and brought from Germany to the German sections of this country, of which this city is one of the great centers, is used in Germany alone exclusively.

Six years ago a strong petition from the deaf was sent up to the government of Germany praying that the combined method might be employed in the United States; that is, not a method of teaching

signs, but a school in which both the oral and manual methods are used. It believes in supplementing one with the other; and experience has shown that speech does not suffer because of it. That petition was opposed by the teachers of Germany naturally because they could not teach by any method except the oral method, and the deaf people who never have any political influence were of course denied their petition. But only a few months ago another great voice came from that Empire, when Dr. Passow, the greatest of all orists in the German Empire, sent to the government a report urging a change in the method of teaching the deaf. He said, "You are not teaching them what the schools of the United States are teaching them." It is not true of the deaf any more than it is true of the hearing, that you can reach all children by any one method; and so, he said, the German government should supply all methods for teaching deaf children. The government has not yet taken action on that petition, and may not see fit to do so. Of course there is vigorous opposition to the proposition. But, mark you, the opposition never comes from the deaf, but from the hearing people, though with the best of motives, and in a spirit of philanthropy, but we cannot frame a system for teaching a class to which we do not belong. The educated deaf themselves know what is best for the deaf.

Thus far then I want you to see that there are two great classes of deaf and two methods of teaching them.

It is commonly believed and frequently reported that if a child learns signs, his speech is degraded. A few months ago it was my pleasure to hear Dr. Kreuter, President of the Society for the Promotion of Speech among the Deaf in the United States, the strongest champion of the oral method in this country, say in public that the orally taught deaf that went out of his school to the combined school, came back better talkers than when they went away. You all know that learning an additional language, does not affect the knowledge of one's own; that it does not harm one's English to know a little Latin; that it is only an added way of expressing thought, and the more ways of expression we have, the better off we are as intelligent beings, and in like manner, adding signs to oral speech improves both.

I do not believe that all children ought to be taught by the combined method from the outset. I believe the day schools in Wisconsin are teaching by exactly the right methods for the day schools and for little children. I believe further, however, that when the child becomes old enough to come to study the subjects that require careful reasoning, the higher mathematics, sciences, etc., then he can

be taught very much better by the use of signs by the manual than by the oral method. I believe that because I have seen it proven over and over again.

Now I would like to see in Wisconsin this condition: The children sent to these day schools when they can be, at their homes or near their homes; but when they outgrow that small environment, let them go to the state school. You and I have been too long acquainted with the advantages of large schools as contrasted with schools having six, seven or eight pupils to believe that those small schools can satisfy a growing child. For the little six, eight and ten year old child, those schools are the best; but whenever the child begins to chafe at being placed with little ones, when he is in a class by himself and longs for larger environment and richer opportunity, then we want him to be sent to the state school with the God-speed of the teacher, just as the school teacher sends the boy on to a higher school when he had finished his course in a lower institution; and I want him to come in a friendly way. Twenty-six children have come to my school since I have been there and not one of them was sent with the God-speed of the teacher, although for this I blame the circumstances and not the teacher.

There is another thing I will come to presently. The teacher acts for the best but does not see all of the problem. Let me cite an instance. The president of a certain board of education wrote me last year asking me to take a certain child into the day school. "But," he said, "do not say to the teacher that I have written you; she does not want the child to come." He was satisfied that we could do more for that 16 year old girl than their little school could; but I cannot see why the teacher should not fall in with that idea, except for two reasons: Many of our oral school friends believe only in the one method. They are just as honest and sincere in that belief as I am in believing in a combination of the two, and I respect that honesty and sincerity in their belief. I believe it is a mistake; I believe these children when they go thru the day school, when they have gotten out of it all that they can if they could only be sent on to the state school with the good will of the day school teacher, the deaf in Wisconsin would be vastly better trained than they were now. In the whole history of this movement only two graduates of day schools have ever come to the state school. One is there now. He has been there two years, and I wish I could speak of the richness of opportunity that he feels. That does not mean that he thinks he made a mistake in not coming there before, but that he sees there is much more to do than he had any idea, under his former environment, could be done.

It ought not not to be a contest, but a working out of a means by which the child can follow the best path toward an enlightened education.

But two things stand in the way. One is what I call the unfortunate financial provision of the law supporting day schools. The teachers are aid \$150 for each child attending those schools per annum. The condition is exactly what it would be if your public school teachers were paid, say \$20 apiece for every child attending school. You see what that would mean. A teacher would hesitate to promote children out of the school. Two or three pupils held back would mean money for her. There may be cases of honest doubt and those cases will be determined on the financial and not on the educational basis. I should like to see the law so changed that the day schools shall be generously supported, and the teachers' salaries and the income of the board from the state shall be constant; that they shall not be penalized because they send a child to the state school. I might call to your attention one instance where a day school teacher was frank enough to tell me that she had in her school two pupils that she knew ought to go to our state school. "But," she said, "I could not recommend it, I had at that time only six pupils and if I sent two of them to the state school, there would be \$300 gone and the board could not stand it; and so I had to keep them." I recognized her awkward position. It would have been better if that woman could have felt that the standing of the school would not have been jeopardized, that her salary would not have been diminished, if she could have expressed her judgment honestly to the superintendent and board.

There is just one other thing: I think these schools ought all to be under one head, but that is not so important as the other point. There ought to be just as much of a friendly relationship existing between the day and the state schools for the deaf as exists between the graded and high schools. Many people will not go beyond the day school, but many of them ought to go beyond, and they ought to be told that there is a place where they can get two or three years more training in addition to what they now have after they have finished the day school.

Then another thing: The deaf, if they ever learn a trade, must get a good start in school. No one will ever have patience with them otherwise. The day schools from the nature of the case cannot give a trade training. One of the important sides of the state school is industrial training. It does not make master mechanics, but sets pupils well on their way. One of the boys who graduated two or

three years ago wrote only a few days ago that he had obtained a position as printer at \$18 a week and that is not an unusual case. The industrial side of the situation is a thing that the deaf must meet. They must be prepared for the battle of life.

Now there has been spread before this body a little pamphlet to which I wish to call your attention. It is put out doubtless with the best of motives, but is blind to all except one side of the situation. I engaged in this special work very recently and I have been astounded, and if I had not a large bump of humour, I should have been very much depressed at seeing the situation as it sometimes comes up. For several sessions of the legislature a bill has been actually introduced to abolish the state school! Now I am a little sensitive; I do not like to be abolished; I do not like the idea of having a school in which my heart is wrapped up abolished; and I do not like to see a class of people whom I believe we are helping more than anyone else can help them (I refer to the older ones) in peril through the possibility of the passage of such a law; although of course it will never pass. The little pamphlet I refer to puts forth the same idea that the state school should be abolished. I do not come here to defend that school, but I urge on you a fuller understanding of the processes of teaching the deaf and of supporting the two systems side by side in a friendly manner. Of course there will be rivalry; there ought to be; that is the way we both do our best work; but that there should be such a thing as actually holding back a child from his education rather than have him go to the other school, is pernicious.

I have in mind a boy that ran away from a day school when he was 15. All the children were smaller than he was, he longed for something else and he simply fled to a neighboring city. He was brought back and the school board said, if you will keep that boy in school the balance of the year, we will pay you \$10 a year. The boy received a part of it, the board made something out of it, they got \$150 and paid \$96, but that financial judgment instead of the educational judgment, kept the boy there. That would not be so bad if he got anything out of it. But he said he did not, because he was in that attitude. He had outgrown that small environment.

Now if the teacher could have stepped in without being penalized for doing it and said, now is the time for your boy to go to another school, there is a larger place for him, he will get something out of it, it would have been all right; but this was not done and the boy dropped out of school, and for eight years worked part of the time in a factory and part of the time was in the street. He ran away again at 23. He had heard of the larger school and wished to attend.

It would have been much better if the family and teacher could have agreed to send him there long before. But most deaf people after being out of school for a while, do not return. Of course I understand that no one would deliberately stand in the way of the largest possibilities of these deaf children. But I do understand that it is possible for anybody, no matter how conscientious, to be so wrapped up in one educational idea, in one educational unit and system that he does not see the value in another, and that he even feels it to be his duty to prevent people taking advantage of that other system. I believe Wisconsin has the opportunity of inaugurating the ideal system for the training of the deaf. We must have these day schools, we must have the state school, and the state school will fit for larger opportunities, but there should be friendly relations, unanimity and harmony between the two systems, thus producing the ideal system of instruction for the deaf.

But do not expect too much of the orally taught pupils. You have read of graduates of Harvard who were deaf, but that is not the case really of the deaf, but of the hard of hearing. They are like ourselves, except that they hear only slightly. I have at the University of Wisconsin today a graduate of our school, and he is doing creditable work, but I would not say to you that we can train those deaf boys and girls so that they can do university work. I know it can be done. That boy was not always totally deaf but became so at eight years of age, and that makes a difference. But you can train the absolutely deaf for larger opportunities than the one system can give them. I mean what I have said in the kindest spirit, and have merely wished to put plainly before you the unfortunate situation regarding the deaf which exists in Wisconsin.

THE STATE AND DAY SCHOOLS FOR THE DEAF.

Supt. B. E. Nelson of Racine.

Discussion.

I shall occupy only a few minutes of your time. Mr. Walker has stated the case concisely and fairly, and I feel that the able representative of the day school who is to follow in this discussion is entitled to as much time as possible. Therefore I shall simply suggest the outline from which I expected to discuss some points that have been fully covered.

I believe that the day school is here to stay because it makes it possible for the deaf child to enter upon an education at a much earlier date than he would be likely to enter upon if he had to go to a state institution. I believe it is better that the state school should be maintained distinctly, because it is possible for the deaf pupil to attend the day school for a number of years while he is still under the immediate control of the parent.

I believe on the other hand that the institution at Delavan is just as important a factor in the state organization as is the day school. I believe that there are many cases that the day school cannot reach because of the inability of the child to appreciate what the teacher is attempting to present. I believe it should be maintained, because I have confidence, so far as I have been able to go into this subject, that the mature child is better off if he has had the opportunities of getting his language and training thru both means of instruction, than if he obtained it thru either.

I think that it ought to be true, whether true or not, that it is possible to center around an educational institution like Delavan, a higher average of ability in the teaching force than you are likely to get thruout the state. We expect better teachers in the State Normal schools than we have in the public schools, and as good or better teachers in the University than in the Normal schools, and I believe it ought to be possible to get into an institution like Delavan a superior corps of teachers who can carry on the education of the child a little more intelligently than in the average day school. I do not deny that they have most excellent teachers in the day schools and that they average high; but I think a state institution should have in its

force a stronger corps of teachers on the average than it is possible to have in the day school.

I believe that the state institution at Delavan serves a very important end in that it makes it possible for the child to secure what he cannot get in the day school so thoroly, viz., that training of the hand, that training of the arts and that preparation for the life that he in all probability must lead, more fully than he can in the day school.

I have not had time to go into the study of the relative merits of the manual and oral systems of teaching, nor go into the history of the subject to such an extent as to be able to speak very intelligently in the premises; but the one thing that has struck me more forcibly than anything else since I have gone into the subject is the apparent feeling between the day schools and the state school. It is difficult to account for this feeling, but I learn that the misunderstanding is one of long duration, and we should strive to overcome this difficulty and co-ordinate the interests of these two schools, so that the feeling between the teachers of the day schools for the deaf and the state school shall be similar to the feeling that exists between the teachers of the Normal schools and the teachers of the University. That is the problem that is impressed upon me more than anything else.

Now claims have been made on both sides in literature that I have received and talks that I have had with the representatives of the two interests. I am sorry to see that situation. There should be but one interest.

It is claimed against the day schools that the pupils are prejudiced against the state school. I believe, so far as I have been able to look into the matter, that that claim is more or less true and thoroly regrettable. I believe that the cause of it has been partially stated in the talk just given, that it rests upon two bases; first, that the day schools are thoroly imbued with the idea that the manual system of teaching is not the best, is not right, is not wise; and in the second place, that the teacher is now paid on what appears to be the wrong basis.

I have been able to read literature that has come into my hands thru the kindness of representatives of both of these interests; I have been able to read somewhat from the reports of the National Commissioner of Education; and in my limited way I have come to this conclusion, from the standpoint of a layman, that the two methods, so far as I can see, are both thoroly desirable; and that it ought to be possible for us to agree upon that point, leaving it, if necessary, for the state school to carry on the secondary system of teaching, and not insisting upon it in the day school at all; and that the state law

should be so modified that it would be possible for the teacher to be paid as well as at present, but on a different basis, making it possible for the child to be transferred from one school to another when it becomes desirable. I am therefore personally in favor of seeing a modification of the law on that point.

DISCUSSION—(Continued).

Frances Wettstein, Milwaukee.

In discussing the efficiency of the day schools, the opinion of one or the other educator can not be taken as the ultimatum, but the natural and psychological laws that underlie the principles that govern them must be taken into consideration.

We must see whether they are able to cope with the conditions as they are today, and the question must be asked: "Do they fit the deaf to become useful members of the home and of society, or is there something better?"

In fitting the child for a happy life in his home and with members of his family, the training of his moral character, or his heart must be considered.

The deaf are called selfish, quick-tempered, irritable, deceitful, hard-hearted and not lovable and affectionate. This is true if they are brought up in conditions contrary to natural law, if they are deprived of privileges and advantages accorded *other* children.

Take any *hearing* boy, let him run the streets until ten years of age and then send him away from home, and what will become of him, even tho the principal avenue thru which his soul can be reached is not closed.

It is the language of expression that appeals to the heart, or the soul. By expression, I mean music, the tone of the voice, facial expression, or the attitude of the body. At least three-fourths of all sensations that appeal to the emotions are received thru the ear. It is music that will make you sad or cheer you up. It is the mother's lullaby that soothes the restless child. It is the tone of the voice that will give pleasure or pain. It is how a thing is said and not what words are used that will make its impression upon the human heart.

A deaf child is deprived of all these subtle influences that make us sympathetic and lovable. One with a passionate temper cannot be controlled by gentle words, one in pain cannot be soothed by sweet music.

But how can he be compensated for the loss of the great power of tone that is the "language of the soul?" Only by the expression of

love in the face, the fond embrace, the kiss, and caress. The lullaby may be replaced by the gentle stroke on the forehead, the words of approval, by the pat on the shoulder. At night the attitude of prayer, and the last gentle caress and kiss of the mother, who must take another look at her darling before retiring will appeal to the child and make his disposition sweeter. And who can best give this? Certainly the mother, and the mother must do it not only until the child is eight or ten, but all thru the years of young manhood or young womanhood.

I think that you will agree with me that the kindly and charitable mother who is willing to take a strange deaf child into her family and care for him, will tender him more love and affection than the attendants at an institution.

It is the small day school to which the teacher brings the greatest mother element. For the teacher who feels that the five or six children in her care are dependent upon her for everything they learn, will love them better than the one who has many pupils and different ones every year. But no matter how much of the mother element the teacher brings into her school, she can not replace the mother. And shall these little afflicted ones be punished by making orphans of them, and depriving them of their birthright,—the expression of parents' love? For of what value is a parent's love if there is no opportunity of exercising it?

And where are the greatest lessons of unselfishness taught? Certainly in the home, and not in an institution where two hundred pupils are treated as a unit.

MENTAL DEVELOPMENT.

It is the home life that develops the child's character and fits him to become a happy member of the family, but it is his mental and physical, or industrial development that will fit him to become a useful member of society at large. Let us see whether the secluded life in an institution, or the contact with the world will bring about the desired results.

The ability to communicate with the people the pupil has to deal with after he leaves school must be considered of primary importance. And these people are hearing people. He must be able to make his wishes known to them by means of speech or writing or to receive information by means of speech-reading. Where can this be done as well as in a day school, in which a pupil has an opportunity to practice and apply outside of school what he learns there. At home, and with his friends, he is entirely dependent upon speech and speech-reading and a few natural gestures. At a very early age he is made

to depend upon himself to go back and forth from school; his mother sends him to do errands, and in a thousand and one little ways he learns to depend upon the lips of others, and, in return, feels that he can make himself understood. This gives him self-confidence and the power to cope with the problems of life that present themselves day by day.

An advantage of the small day school is that often the little deaf children go to the regular kindergarten, take part in the games and imitate normal children, or, the older ones attend the rhetoricals of the upper grades, thus becoming regular members of the school at large. They attend the talks given by the regular museum lecturer; visit factories, where the foreman explains a certain process; visit stores, where the clerks are willing to show the different wares; attend a session of court; draw books from the public library; attend cooking school and manual training shops with hearing children. *These* are advantages that can not be given to pupils in a large institution, usually located in an isolated place. And what could be *better* than *all this* to prepare children to take their place in society later on? And shall all these advantages be denied a pupil simply because he lives far away from an established school? Should not the parent have the right to determine which school his child shall attend, and is it not very unpedagogical to deny weaker pupils such advantages as are good for those of average intelligence?

But the question, "Can every deaf child be taught speech successfully?" has been raised. To this I would answer that the large majority can. Some claim as many as ninety per cent. There are some with physical defects, such as paralysis of the soft palate, enlarged tonsils, or adenoid growths, whose speech is intelligible only to the members of the family; but these are very often fine lip-readers, and speech reading is worth as much as good speech. Besides, mental development is one of the principal ends for which we are striving, and speech is one of the means employed. Psychologists tell us that there are certain nerve centers in the brain developed by the use of the senses,—sight, hearing, taste, touch and the motor muscles. In a person both deaf and dumb the nerve centers of hearing and speech are not developed and soon become atrophied. This results in an abnormal development of the brain. A deaf person taught speech will have but one undeveloped nerve center, that of hearing, and this is partially compensated for by the greater development of the nerve centers of sight, thru lip-reading. Also the ability to distinguish sounds, or even vowels or words, is very often developed in a child as he learns to talk, and this sound perception will develop the nerve centers of hearing.

If this theory of psychologists is correct, then there can be no doubt but that a teacher striving for intellectual development must make use of speech and speech-reading in order to make the mind of his pupil as nearly normal as possible.

In nearly all day schools, speech is taught,—and successfully, too. But why is it often a failure in institutions? Because the sign language is "a lazy language," to use Dr. Gallandet's words, and pupils will resort to signs and not practice speech when they are not required to do so, and when they are not made to feel the absolute necessity of using it, as they do at home.

INDUSTRIAL TRAINING.

And last, but not least, a word regarding the industrial training of the deaf. What to do to make the deaf independent and self-supporting is always a serious question.

Fifty years ago it was thot best to teach a certain trade to the boys and girls. But times have changed and the machine has taken the place of the hand.

The man of judgment, self-reliance, creative ability, and the power to cope with the situation as he finds it, is the one who will get along best in the world and not the man who has learned an antiquated trade.

The superintendents of the best equipped industrial departments in the country are of the opinion that it is not so much a trade that the deaf child needs as the power to do well what he undertakes, and that, beginning with the kindergarten, this idea should be emphasized thruout the school life. The manual training that develops judgment and creative power by giving expression to the thots and ideas in the child's mind by means of designing and making things; that develops the artistic spirit and the love for the beautiful, so essential in a child's development; that forms habits of neatness, patience, order and a willingness to work,—that is the industrial training that a child in the elementary school needs and which can be given all, even to those attending the very smallest schools.

The manual training that the average child receives at home ought not to be underestimated.

The girls help mother in her household duties,—mend clothes, take care of baby, set the table, wash the dishes, take care of their rooms, and prepare the different dishes they have learned to cook at cooking school; the boys help father in the work about the house,—put up screens, storm windows, fix a broken chair, and in many ways make themselves useful.

Now, after giving the deaf child all the attention that is due him,

letting him develop in a natural environment with his brothers and sisters, sharing and bearing the troubles of life, learning the value of money, and learning to sacrifice his desires for those of others; and then, at an early age, sending him to school, where he learns to communicate with hearing people; where he gains self-reliance, good habits, and a willingness to work, and acquires a general knowledge of the rudiments of education;—in short, after letting him develop in a natural way until he is fifteen or sixteen, the majority of boys and girls of average intelligence and with no physical defect, barring deafness, will be able to attend the higher schools with hearing boys and girls. There can be no question that this is the best policy to pursue whenever it can be done, for only by constant practice can English become the vernacular of the deaf, and only by constantly associating with hearing people can they overcome the diffidence and embarrassment that make them feel isolated and unhappy in their company.

If circumstances will not permit children to attend school after they have finished the elementary course, they ought to be able to learn a trade or engage in some business, like hearing boys and girls.

But, if, for one reason or another, a pupil is not capable of attending a school with the hearing,—what then?

At present, there are three fields open to him: he may go to the National College, at Washington, D. C.; take a post graduate course at his own school with the manual training course at the city high school; or, go to the State Institution to learn some antiquated trade, which would not be of very great value at the present time. This is not a consummation devoutly to be wished, but it is all that is open to a deaf boy incapable of attending a school with the hearing.

As the fundamental principle of day schools is the decentralization of the deaf and not their centralization in separate communities, we can not advocate their going to an institution where they would not have an opportunity of making practical use of the speech they have learned with so much painstaking.

If the institution were a place like the "externate" in Germany, where pupils are boarded in families,—the board of only the indigent ones being paid by the state,—it would be a different thing; and it, added to this, the industrial department were an up-to-date trades school, we would heartily endorse it.

There is need of a trades school, where the boy would have an opportunity to become an expert engraver, a designer, an architect, or an electrician; where there would be an up-to-date shoe factory,

a modern printing establishment, an agricultural department, and a machine shop,—all up-to-date.

This would not incur a greater expense to the state than to support a charitable institution. Besides such a change would go away with the evil that results from fostering the idea in parents that the state owes their deaf children a living,—an idea that seems to relieve them of all sense of duty and responsibility.

Time will not permit me to take you thru a brief sketch of the history of the education of the deaf, or I might show you in the evolutionary progress, that the institution was the outgrowth of needs and conditions a hundred years ago; and, that conditions, and especially the facilities for rapid transit, have changed; and that something better has come to take the place of the institution.

It is a pity that there can be no growth without conflict and that some must die that better ones may live; but it is natural law and we must submit to it.

The day school movement is in its infancy, but it has survived its stage of weakness and shows by its growth that it is at least, fit; and I believe, the future will soon demonstrate that it is fittest.

EXECUTIVE COMMITTEE'S FINANCIAL REPORT.

EXPENDITURES.

Orders issued:		
May 21—	Order 1 to Carl Mathie for expense attending executive committee meeting at Milwaukee	\$13 74
May 21—	Order 2 to G. C. Shutts for expense attending executive committee meeting	5 00
May 21—	Order 3 to Cannon Printing Co. for stationery and letter-heads.	14 50
May 21—	Order 4 to Katherine R. Williams for postage, telephone and express	3 15
May 31—	Order 5 to Stump & Yaw for typewriter	64 00
June 3—	Orders 6 and 7 to H. H. West Co. for account books, letter-files and letter-books for president and secretary	3 25
June 24—	Order 8 to L. D. Harvey, N. E. A. appropriation	100 00
Sept. 15—	Order 9 to Katherine R. Williams for stamps	25 00
Nov. 3—	Order 10 to A. H. Sage, appropriation for 1904, use of Committee on Teachers' Work and Wages	104 92
Nov. 7—	Order 11 to Radtke and Kortsch for stamped envelopes, letter-heads for C. E. McLenegan	8 50
Dec. 13—	Order 12 to Wm. F. Sell, postage for mailing railway circulars.....	9 67
Dec. 27—	Order 13 to John Kennedy for lecture and expenses	60 00
Dec. 28—	Order 14 to Paul G. W. Keller for partial expenses of orchestra	25 00
Dec. 28—	Order 15 to C. R. Showalter, expenses of Dr. Pogue and two pupils from the School for the Blind	10 00
Dec. 28—	Order 16 to M. H. Jackson, expenses of County Superintendents and County Training School section.....	4 60
Dec. 28—	Order 17 to F. S. Hyer for College, Normal and High School section .	2 50
Dec. 28—	Order 18 to C. W. Rittenburg, expenses of Committee on Enrollment, postage, etc	11 70
Dec. 28—	Order 19 to Cannon Printing Co. for printing announcements, railway circulars, programs, etc., per itemized bill.....	199 13
Dec. 28—	Order 20 to Leola I. Hirschman for services as stenographer	18 00
Dec. 28—	Order 21 to Katherine R. Williams for freight, cartage and express- age on proceedings, postage, telephone, car fare, as per itemized bill.	53 16
Dec. 28—	Order 22 to Radtke and Kortsch for printing circular letters for C. E. McLanegan	11 25
Dec. 28—	Order 23 to Alfred Bayliss for lecture and expenses.....	66 95
Dec. 28—	Order 24 to Katherine R. Williams for two trips to Madison account of proceedings	7 80
Dec. 28—	Order 25 to Dr. Amos P. Wilder, lecture and expenses	27 25
Dec. 28—	Order 26 to Leon Waschner for rent of Pabst Theater	125 00
Dec. 28—	Order 27 to Wm. L. Tomlins for two lectures and expenses	53 50
Dec. 28—	Order 28 to M. N. W. McIver for expenses of Committee on Nomi- nations	13 80

PROCEEDINGS OF FIFTY-THIRD ANNUAL SESSION. 187

Dec. 28—Order 29 to Wm. F. Sell, salary and incidental expenses (itemized), as R. R. Mgr.	20 64
Dec. 28—Order 30 to Dr. Frederick M. Edwards for lecture.....	100 00
Dec. 28—Order 31 to W. H. Middleschulte for organ recital	25 00
Dec. 28—Order 32 to Katherine R. Williams for salary April 1 to Dec. 31, 1905..	150 00
Dec. 28—Order 33 to F. C. Safford, Plankinton House, for lumber, porter serv- ices, etc., for Pure Food exhibit, telephone calls, registry book, etc.	7 38
Dec. 28—Order 34 to Alice P. Norton for lecture to Domestic Science section and expenses	25 00
Dec. 28—Order 35 to Davidson Theater, rent.....	100 00
Dec. 28—Order 36 to Cora Hamilton for expenses.....	15 00
Dec. 28—Order 37 to Lucius T. Gould for expenses of local committee per itemized account.....	139 17
Jan. 8—Order 38 to J. W. T. Ames for expenses of Superintendents and Super- vising Principals' Association.....	15 00
Jan. 8—Order 39 to Flora J. Cooke for lecture and expenses to Primary sec- tion	17 50
Jan. 8—Order 40 to C. E. McLenegan for expenditures per itemized receipts .	22 49
Jan. 8—Order 41 to Louise A. Steiner for services as stenographer for the president	10 00
Feb. 3—Order 42 to Edith I. Harney, expenses of Music section	3 25
Feb. 14—Order 43 to Amanda Diederich for services as short-hand reporter at general sessions, office hire and arranging list of members	30 60
Feb. 14—Order 44 to Robt. Jackson for cartage and delivery of balance of pro- ceedings	2 50
Feb. 26—Order 45 to Silver, Burdett & Co. for music copies	1 86
Mch. 17—Order 46 to A. G. Wright for local appropriation International Kindergarten Union meeting at Milwaukee	25 00
Mch. 17—Order 47 to John Finan, Elizabeth Allen, Elizabeth McCormick, W. L. Smithyman for postage.....	2 59
Mch. 26—Order 48 to Katherine R. Williams for salary from Jan. 1 to April 1, 1906.	50 00
Total	\$1,804 35

TREASURER'S REPORT

for the year ending April 1, 1906.

RECEIPTS.

Received from F. A. Lowell, balance on hand	\$1,077 00
Local donations for hall rent, viz.:	
The Chapman Co.	20 00
Espenhain	5 00
Bauch	5 00
Ed. Schuster & Co.	5 00
Boston Store	10 00
Gimbel Bros.	20 00
Garretson Silk Co.	5 00
Preusser Jewelry Co.	5 00
Bunde & Upmeyer.	5 00
Milwaukee Hotel Assn.	125 00
From sales of membership before the annual meeting	1,170 50
From memberships sold during the meeting	229 50
From N. E. B. balance returned by L. D. Harvey	25 50
Total	\$2,707 50

DISBURSEMENTS.

Paid orders 1-48, inclusive, issued by the secretary	\$1,804 35
Balance, on deposit in the National Exchange Bank	903 15
Total	\$2,707 50

C. W. RITTENBURG, Treas.

Whitewater, Wis.

**LIST OF MEMBERS OF THE WISCONSIN
TEACHERS' ASSOCIATION.**

<p>AFTON.</p>	<p>ASHLAND.</p>	<p>Metcalf, Alice.</p>
<p>Antisdal, O. D.</p>	<p>Barney, Sibyl.</p>	<p>Luebke, Ida.</p>
<p>ALGOMA.</p>	<p>Beig, Marie.</p>	<p>Ochsner Emma.</p>
<p>Dodge, B. O.</p>	<p>Brown, Mattie.</p>	<p>Secker, Alice.</p>
<p>Pflughoft, Henry.</p>	<p>Crothers, H. B.</p>	<p>Snyder, G. F.</p>
<p>ALMA.</p>	<p>Deakin, Belle.</p>	<p>Stout, A. B.</p>
<p>Liebenberg, H. H.</p>	<p>Denman, Laura.</p>	<p>Tuttle, Grace M.</p>
<p>Runkle, L. E.</p>	<p>Dopp, Mary.</p>	<p>Upham, Emily.</p>
<p>ALMOND.</p>	<p>Edwards, E. A.</p>	<p>Van Stone, Ida E.</p>
<p>Karnopp, J. S.</p>	<p>Hamacker, Edith.</p>	<p>Varnell, Edna.</p>
<p>ANTIGO.</p>	<p>Hooper, J. T.</p>	<p>Wiggins, Katharine.</p>
<p>Aversen, A. M.</p>	<p>Horn, Miss E.</p>	<p>BARNEVILLE.</p>
<p>Hickok, W. H.</p>	<p>Jackman, Margaret.</p>	<p>Armeson, B. A.</p>
<p>Marston, Myrtle.</p>	<p>McMillan, Mary.</p>	<p>BEAVER DAM.</p>
<p>Payne, May.</p>	<p>Merrill, Agnes.</p>	<p>Bell, Marion C.</p>
<p>Rowe, M. H.</p>	<p>Meyer, E. F.</p>	<p>Coerper, Elsie L.</p>
<p>Smezey, Seevis.</p>	<p>Orme, Wm. H.</p>	<p>Hubbell, H. B.</p>
<p>APPLETON.</p>	<p>Sawyer, Harriet.</p>	<p>Ruedl, Ida M.</p>
<p>Cornesford Margaret.</p>	<p>Sagent, Martha.</p>	<p>Scully, Elizabeth.</p>
<p>Lewis, A. M.</p>	<p>Shockley, D. C.</p>	<p>BELLEVILLE.</p>
<p>Moyl-, Thomas R.</p>	<p>Tuayer, O. B.</p>	<p>Steil, W. N.</p>
<p>Nicholson, Dexter P.</p>	<p>Vander Bie, Mary.</p>	<p>BELOIT.</p>
<p>Newberry, D.</p>	<p>Wiggins, Helen.</p>	<p>Collie, G. L.</p>
<p>Plantz, Dr. Samuel.</p>	<p>ATHENS.</p>	<p>Converse, F. E.</p>
<p>Pringle, R. W.</p>	<p>E'dred, C. H.</p>	<p>Chapin, R. C.</p>
<p>Rollins, Martha.</p>	<p>Pflughoft, Emms.</p>	<p>Cooney, Margaret.</p>
<p>Silvester, John.</p>	<p>BAILEY'S HARBOR.</p>	<p>Cravath, Mary B.</p>
<p>Smith, Ernest T.</p>	<p>Braun, J. W.</p>	<p>Denmore, H. D.</p>
<p>Treat, Charles W.</p>	<p>BARABOO.</p>	<p>Dugan, Anna.</p>
<p>Wilson, J. F.</p>	<p>Brownlee, Mattie.</p>	<p>Frederick, Helen.</p>
<p>Young, F. P.</p>	<p>Clarke, Bevelyn.</p>	<p>Gilbert, Agnes.</p>
<p>ARCADIA.</p>	<p>Desmond, Louise.</p>	<p>Goddard, Veda.</p>
<p>Kiekhoefer, W. H.</p>	<p>Drew, D. A.</p>	<p>Gray, Carrie.</p>
<p>Mason, Harriet.</p>	<p>Falvey, Katherine.</p>	<p>Hessman, Lena.</p>
<p>ARGYLE.</p>	<p>Fisk, Lulu B.</p>	<p>Holmes, Harriet.</p>
<p>Masse, W. G.</p>	<p>Gehrand, G. W.</p>	<p>Horstman, Laura.</p>
<td data-bbox="347 1929 610 1624"> <p>McArthur, Minnie.</p> </td> <td data-bbox="610 1929 862 1624"> <p>Hubbard, Mary B.</p> </td>	<p>McArthur, Minnie.</p>	<p>Hubbard, Mary B.</p>
<td data-bbox="347 1965 610 1624"> <p>McKercher, Katherine.</p> </td> <td data-bbox="610 1965 862 1624"> <p>Inman, Mabel.</p> </td>	<p>McKercher, Katherine.</p>	<p>Inman, Mabel.</p>
<td data-bbox="347 2000 610 1624"> <td data-bbox="610 2000 862 1624"> <p>McIntyre, Mary.</p> </td> </td>	<td data-bbox="610 2000 862 1624"> <p>McIntyre, Mary.</p> </td>	<p>McIntyre, Mary.</p>
<td data-bbox="347 2036 610 1624"> <td data-bbox="610 2036 862 1624"> <p>Moore, Emily.</p> </td> </td>	<td data-bbox="610 2036 862 1624"> <p>Moore, Emily.</p> </td>	<p>Moore, Emily.</p>
<td data-bbox="347 2072 610 1624"> <td data-bbox="610 2072 862 1624"> <p>Pierson, J. C.</p> </td> </td>	<td data-bbox="610 2072 862 1624"> <p>Pierson, J. C.</p> </td>	<p>Pierson, J. C.</p>

LIST OF MEMBERS—continued.

Quelman, Elsie. Quinlan, Elizabeth. Randall, Charlotte. Richardson, Robert K. Robinson, Robert. Rogers, Helen. Smith, Alice. Van Plew, John. Waite, Fanny. Wickham, Margaret.	BURLEIGH. Warren, May.	COLMAN. Forsythe, Grace.
BERLIN. Fitzmaurice, Mary. O'Brien, E. T. Starling, Jean.	CALEDONIA. Morley, Mathilda. Morley, Hattie.	COLUMBUS. Thomsen, Fred. Turner, Lura. Van Briesen, Nora.
BIRNAMWOOD. Stewart, W. W.	CATAWBA. O'Neill, L. J.	COOPERSTOWN. O'Dea, B.
BLACK EARTH. Hatch, L. C.	CECIL. Boyden, Roy N.	CRANDON. Kamm, H. A. Keith, H. P. Lindeman, J. H.
BLACK RIVER FALLS. Crawford, Robert S. Yule, Maud.	CEDARBURG. Cady, Elsie Clare. Holtz, E. O. Krohn, H. C. Pauly, Hugo A. Raeder, Lester. Law, Chas.	DARLINGTON. Loveland, R. E. Loveland, R. E., Mrs. Patterson, E. R. Reese, Spencer P. Winter, C. M.
BLANCHARDVILLE. Herndel, Roy L. Holland, Inga.	CHICAGO, ILL. Bacon, Paul. Cheeney, A. J. Gannon, Madora D. Manasse, F. L. Smith, M. A.	DOUSMAN. Melville, James.
BLAIR. Halverson, A. L.	CHILTON. Fox, Leo P. Morrissey, G. M.	DEERFIELD. Dahley, Ella. Gallagher, Caroline. Rice, O. S.
BLOOMINGTON. Adams, Lulu.	CHIPPEWA FALLS. Ainsworth, B. Brunstad, P. A. Cenfield, Frank. Cunningham, Mary. Ewing, Marjorie. George, Frances. Gillette, Ada. Lobb, A. J. Ludington, Lilla B. Martin, E. D. McGraw, Mattie. Murphy, James R. Prince, Angeline. Ritchie, Mary A. Thomas, Katherine. Trudell, Bertha. Whelan, John. Wilmarth, A. W.	DEFOREST. Meland, E. C.
BOSCOBEL. Palmer, M. C.	CLINON JUNCTION. Angell, Ralph J. Lowth, Frank J.	DELANVAN. Coburn, Alice T. Congdon, H. A. Davies, I. B. Fitzgerald, Edith. Fowler, Frances E. Gray, W. E. Gregory, Seth W. Hagerty, Thomas. Hobart, Almira I. Lange, Paul. Patterson, Minnie. Walker, E. W. Winston, Matie E.
BOYD. Bralburg, E. H.	CLINTONVILLE. Switzer, W. E.	DE PERE. Stennis, John W.
BRANDON. Rekow, B. M.	COLBY. Swartz, D. A. Zassenhaus, D. A.	DODGEVILLE. Babcock, C. G. Bray, Emery. Bray, Emery Mrs. Waddington, Wianifred.
BRILLION. Cronin, Timothy. Stevens, F. J.		DULUTH. Post, Katherine D.
BRODHEAD. Harrison, F. A. Kittellson, May.		
BROOKFIELD. Thatchi, Mattie.		
BROOKLYN. Frank, B. Green.		

PROCEEDINGS OF FIFTY-THIRD ANNUAL SESSION. 191

LIST OF MEMBERS—continued.

EAGLE RIVER.	FOND DU LAC.	GREEN BAY.
Cook, Grant. Fuller, Will D Richison, Guy.	Ahern, Helen. Bechand, Laura. Blewett, Rose. Burrows, Emma. Chegwin, Rose.	Alling, Etta M. Black, Mary C. Brauns, Mary C. Brauns, Lydia.
EAST TROY.	C'none, Nau. Davidson, B. Donolly, Eliza.	Brown, Wm. O. Burke, Josephine. Cary, Chas.
Winder, Julius.	Dougherty, Ella. Evans, Kittie. Fahey, Sarah.	Diekmann, Minnie L. Dunn, Jennie. Doyle, Nelley E.
EAU CLAIRE.	Fink, Martha. Flanagan, Lula. Gleeson, Mary.	Gaffney, Eleanor S. Holzer, G. J. Kelleher, Minnie H.
Arnold, A. G. Barce, Lura. Clark, W. A. Deneen, A. C. Fawley, M. S. McIver, M. N. McArthur, Katharine. O'Brien, Stella. Quinlan, Berdice. Sbenhal, F. R. Smith, Jennie C. Wilkins, Franc A.	Goebel, J. P. Graudt, Julia. Harney, Mable. Hobbs, Jessie.	Luckenbach, Josephine. Mayer, Camille. Nichol, Jessie.
EDGERTON.	Keats, Myron E. Manion, Margaret. Nugent, Elizabeth.	O'Neill, Margaret. Platten, Mary K. Potter, Frances.
Jenks, Frank. Stafford, Margaret.	Ryder, Julia. Saak, Bertha. Searl, Ida.	Ryan, Cecelia. Sutton, Cora. Sutton, H. F.
EDGERTON.	Schoeni, Norah M. Smalley, D. H. Stanton, Rose.	HARTFORD.
Jenks, Frank. Stafford, Margaret.	Tompkins, Pearl. Waters, Elizabeth. Wilson, Wm.	Elmer, W E. Maas, P. J.
ELAND.	Zinke, Olga.	HARTLAND.
Giessel, J. E.	FORT ATKINSON.	Rhoads, Mrs. G. B.
ELKHART LAKE.	Hagemann, J. A. Halsey, H. R. Smith, Carrie J.	HILBERT.
Dornbush, H. C. Kennedy, Jos. E.	FORT WAYNE, IND.	Shannon, James.
ELKHORN.	Calmerton, Gail.	HORICON.
Jones, T. J. Lauderdale, Clara. Vos, J. G.	FOX LAKE.	Hein, Fred W.
ELK MOUND.	Robertson, W. B. Smith, Anna.	HUDSON.
Brackett, Jennie M.	FREDONIA.	Bohrer, R.
ELLSWORTH.	Beger, Richard.	HURLEY.
Ingli, A. J. Scofield, H. A.	Coisins, J. H. Louis, John P. Louis, Mrs. J. P.	Armstrong, E. T. Armstrong, Mrs. E.
EMBARASS.	GAY MILLS.	INDEPENDENCE.
Breed, Florence. Jenks, Frank.	Pomeroy, H. R.	Christensen, J. H.
EVANSVILLE.	GLEN BEULAH.	IOLA.
Scholtz, A. H.	Bonham, John H.	Gunderson, Oscar. Lenthold, Minnie. Lenthold Clara. Lenthold, Meta.
FENNIMORE.	GILLETT.	IRONWOOD.
Kertcher, H. W.	Swartz, D. L.	Brennan, J. V.
FLORENCE.	GRAND RAPIDS.	JACKSON.
Darling, Wm. T. Howell, Jean. Humphrey, May M.	Hubbard, I. O. Merrill, Mrs Anna. Youker, H. S.	Maxon, J. G.
		JANESVILLE.
		Aiken, Lucy. Atwood, Abbie A. Buckmaster. —.

LIST OF MEMBERS—continued.

Buell, H. C.
 Buell, Mrs. H. C.
 Callahan, Ida.
 Casford, Lenore.
 Clark, Harvey.
 Clark, E. May.
 Clemens, Cora.
 Cody, Janet.
 Colman, Laura L.
 Crowley, Katherine.
 Cunningham, Phoebe.
 Denoyer, Nelva.
 Dutton, Julia.
 Enright, Katherine.
 Enright, Rosemary.
 Fuller, Anna.
 Gagen, Rose.
 Harris, Lizzie.
 Hayes, Genevieve.
 Hemingway, Chas.
 Henderson, May.
 Hickey, Sarah.
 Joyce, Margaret.
 Joyce, Minnie T.
 Jolley, Bernice.
 Lillis, Elizabeth.
 London, Jessie.
 Loomis, Sarah E.
 McKenzie, Hattie M.
 Miller, Ruth Bethana.
 Murray, Eliz F.
 Nelson, Kate.
 Paterson, Eliz.
 Paterson, Margaret.
 Paulson, Emma.
 Peterson, Peter.
 Sayles, Bertha.
 Shearer, Louise.
 Smith, Ida M.
 Spear, Cora.
 Venable, Sarah.
 Whiffen, Alice.
 Whitmore, Lucy.
 Willey, Hazel.
 Youngclausse, Margaret.

JEFFERSON.

Hazelwood, John A.
 Muenich, Max M.

JUNEAU.

Bauer, Oscar H.
 Kelley, John.

KAUKAUNA.

Morgan, Kent.
 Morton, W. E.
 Tenner, Eleanor A.

KENNAN.

Bowman, W. A.

KENOSHA.

Bailey, Isabel.
 Betzer, E. E.
 Brown, S. Edith.
 Hocking, W. J.
 Hood, Edna E.
 Graves, Cora E.
 Kaltenbach, Frances.
 Keating, Marie A.

Lindauer, Helen.
 McKenzie, Helen M.
 Petersen, Peter.
 Stevens, Anne.
 Slater, Una M.
 Woodstock, C. B.
 Zimmers, P. J.

KEWAUNEE.

Drissen, W. H.
 Dvorak, A.

KIEL.

Schmitz, O. W.
 Striebel, Marie.

KILBOURN.

Smith, C. W.
 Smith, Grace.

KIMBERLY.

Gunnert, N. H.....

LA CROSSE.

Bird, John P.
 Hayden, Harry G.
 Hemmenway, W. R.
 Kuerth, W.
 Schubert, Albert H.
 Wieland, Otto E.
 Zimmer, A. A., Mrs.

LANCASTER.

Nye, Chas. H.
 Rasmusson, Geo. A.
 Sabin, Lillian
 Slothausen, C. E.

LAKE GENEVA.

Rogers, Hattie.
 Smith, Marrietta.
 Snow, H. M.
 Stewart, Anna.
 Valentine, Florence.

LAKE MILLS.

West, Allen B.

LAONA.

Lange, Edw. G

LARSON.

Clark, Alyda E.
 Clark, Almeda.

MADISON.

Andrews, Helen G.
 Augell, E. D.
 Barnett, Maud.
 Bleyer, W. G.
 Billington, Kate.
 Borden, B.
 Bcrgress, W. B.
 Bowers, Jessie M.
 Cravette, Ida M

Crawford, Fanny.
 Dean, Alletha F.
 Dearborn, Walter F.
 Dengler, Clara.
 Donnelly, C. A.
 Drewry, G. H.
 Dudgeon, R. B.
 Edgar, Mary C.
 Ekern, Alice O.
 Elliott, Edw. C.
 Elsom, J. C., Dr.
 Feeney, Kate L.
 Godfrey, Alice S.
 Graham, Eliz.
 Grossman, August.
 Harper, Caroline A.
 Harper, Carrie.
 Herfurte, Elez.
 Hunt, W. H.
 Hutcheson, J. H.
 Jenkins, Sara D.
 Kavanaugh, Cecelia.
 Lockwood, Mildred.
 Martiri, Kerwins.
 Marvju, Adeline.
 McDermott, Josephine.
 McNeill, A. H.
 Meyer, B. H.
 Neevel, Jennie E.
 O'Keefe, Mary A.
 Otterson, A.
 Owen, Herman E.
 Parker, W. N.
 Parkinson, J. B., Prof.
 Parsons, Alice.
 Parsons, Emily.
 Pruess, Bertha H.
 Riley, Mayme.
 Riley, Martha.
 Salisbury, Oliver M.
 Schaffner, Anna E.
 Scott, W. A.
 Shearer, Elga M.
 Showalter, C. R.
 Skinner, E. B., Prof.
 Slaughter, M. S., Prof.
 Surneaux, F. E.
 Terry, H. L.
 Tressler, A. W.
 Verran, Laura E.
 Wagner, George.
 Warninz, Winnie C.
 Williams, Jennie M.
 Zimmerman, Louise.

MANAWA.

Smith', W. E.
 Smith, W. E., Mrs.

MANITOWOC.

Anderson, Mary.
 Christiansen, Fred.
 Davies, T. V.
 Eigenberger, Geo.
 Healey, Nora.
 Healey, Minnie.
 Keller, Paul G.
 Kelley, Margaret.
 Larson, Walter E.
 Lewis, Lucy.
 Luehr, W. H.
 Meisnest, C. W.
 Miller, Marie G.
 Strouse, Catharine.

LIST OF MEMBERS—continued.

MARINETTE.	Foley, Elizabeth.	Bird, Alice.
Hutchinson, Mary.	Moyle, Laura S.	Bishop, Adelaide.
King, E. M.	Petijohn, John.	Bishop, Edwin.
Landgraf, G. H.	Schlafer, Adeline.....	Bitner, Laura C.
Shepard, U. S.		Blaisdell, Guy A.
Zerull, Clara.		Blanchar, Ora A.
	MERRILLAN.	Blend, Elizabeth.
		Blend, Frances.
MARION.	G D. Rice.	Bleyer, Lloyd, G.
Mostenson, M.		Bleyer, Addison M.
	MILTON.	Blodgett, Sarah E.
		Blumenthal, Lulu.
MARSHFIELD.	Bartlett, W. C.	Boers, H. C.
Durant, Gile.	Ingham, Helen A.	Boitton, Sarah E. B.
		B infoey, Jennie.
	MILTON JUNCTION.	Booth, Anna.
MAUSTON.		Booth, Mary.
	Goodhue, R. S.	Booth, Phoebe W.
Green, W. E.	Hahn, Ada.	Boyce, Leola.
Harrison, K.	Harrison, Edna.	Boyce Thos W.
Carroll, C. A.	Kidder, Cora.	Boyle, Laura.
	Langworthy, Angie.	Boyle, Gertrude.
	Strong, Ethel.	Braband, Emma.
MAU.	Thiry, Maud.	Braband, Lilla.
Thomas, Gertrude.		Bradley, Myrtia.
	MILWAUKEE.	Braun, Adolph R.
		Braun, Rudolph.
MAYVILLE.	Abbott, L R.	Bray, Ellen V.
	Abrams, B. A.	Brekow, Anna.
Keeley, L. S.	Abernethy, Mary E.	Brembach, Rosalia.
Naber, Della.	Adams, Grace G.	Brennan, Kate.
	Addington, Daisy	Briggs, Ada.
MEDFORD.	Albert, Alice M.	Brigham, May E.
	Aldrich, Mildred.	Broche, Elsie.
Arnemann, H. F.	Allen, Hattie L.	Brookins, Julia L.
Latton, A. J.	Allen, Amy.	Brown, Andrew C.
Morris, Robt.	Althoff, Pauline.	Brown, Helen.
Polley, Henry E.	Amazee, Sadie.	Bruce, Wm. G.
Ryan, Henry.	Anderson, Madge.	Brugger, Frances A.
Zentner, W. R.	Andressohn, John C.	Brunkhorst, Esther.
	Andressohn, Dorothea.	Brunkhorst, Lucy.
MENASHA.	Andrzejewski, Victoria.	brunkhorst, Wilhelmine.
Callahan, John.	Appleyard, Emma.	Buchholz, Louise.
	Armstrong, Edith.	Buckley, Bessie E.
	Baas, Mayme M.	Buckley, Kate E.
MENOMONIE.	Bach, Ida E.	Buetow, Wanda.
	Balch, Helen.	Bullock, Agnes.
Ammann, Leo.	Baldwin, Rae.	Bundy, Minna G.
Ashmun, Margaret.	Balxer, G. F.	Bunson, Sophia.
Bowman, G. L.	Bandow, Dina.	Burch, Ethel.
Brundage, H. D.	Banks, Nellie.	Busack, Anna.
Bryan, C. H., Mrs.	Barber, Clara B.	Buss, Flora.
Burgett, Kate.	Barber, Eva G.	Buss, Mabel.
Buxton, Geo. Fred.	Barsness, Miss A.	Bussewitz, M. A.
Dunning, Mary A.	Barton, Ella.	Byington, Josephine.
Ferris, Jessie M.	Bauer, Emily C.	Calkins, Ernest E.
Harvey, L. D.	Beach, Wm. H.	Callaway, Agnes.
Howe, Zelta Judd.	Beardsley, Gertrude.	Callaway, Bessie.
Jones, Ida I.	Becker, M. W.	Callen, Sara.
Junack, Emma.	Becker, Clara C.	Cameron, Ethel.
Lounsbury, Nellie.	Becker, Rachel.	Calmerston, Evalyn.
McArthur, N. J.	Becker, Wm. O.	Canty, Margaret.
McGilvra, Avis A.	Beetham, Bernice.	Carrigan, Margaret.
Ott, Francisca Louise	Bensel, Martha L.	Carroll, Lillian C.
Rinehart, Gertrude L.	Berg, Harold O.	Carroll, Mary C.
Schrtsmier, Kate.	Berdie, Rose H.	Carroll, Sarah J.
Steinfeldt, Emma E.	Bergman, Emma.	Case, D. C.
Steward, Maud.	Bernard, Elizabeth.	Case, Lucie.
White, Marian.	Bernard, Jesse.	Cassoday, Ella F.
Works, Geo. A.	Beruhard, Henrietta.	Cather, Harriet M.
Wright, Helen L.	Best, Hattie.	Chapman, A. D.
	Betten, I. N.	Chapman, Evangeline.
MENOMONIE FALLS.	Bickler, Sophie.	Chamberlin, Geo. A.
	Bickler, Peter.	Chase, M. Belle.
Eaton, Ruth.	Bibinger, Elma.	Cheever, W. H.
Everett, Florence.	Birsh, Anna.	Christensen, Olive L.
Fitch, Helen.	Bird, Selena.	

LIST OF MEMBERS—continued.

Krystal, Ella E.	Doolan, Sadie M.	Fromm, Wm. H.
Church, Emeline P.	Dolan, Catherine E.	Freustueck, Lily F.
Churchill, Mary.	Dolan, Frances.	Fuchs, Theresa.
Clarey, Katherine.	Donnelly, Elizabeth.	Fuller, Gertrude.
Clark, Mrs. Frances E.	Donnelly, Celia A.	Funk, Mary L.
Clark, Mrs. Ida H.	Donnelly, Margaret.	Galligan, Annie B.
Clark, Margaret.	Donnelly, Mary V.	Ganski, Grace V.
Clarke, Vinnie B.	Donnelly, Patrick.	Gardner, Emma J.
Clarke, A. Blanche.	Donnelly, Theo.	Gardner, Ethel M.
Clarke, Flora A.	Dorner, Ida J.	Garnett, Alice J.
Clarke, Ida A.	Dorman, Florence.	Gebhardt, Emma W.
Clarke, Lillian E.	Dougherty, Nellie M.	Geerlings, Alice.
Clarke, Rose A.	Dowit, Lucy Halo.	Gehrs, Cora C.
Clarke, Belle S.	Dowling, Mary.	Gerber, Lina M.
Clay, Leora.	Doyle, Alice.	Gere, Mary.
Clinton, Emma M.	Doyle, Etta B.	Geresch, Paul.
Coblentz, H. E.	Doyle, Margaret T.	Geske, Margaret.
Coe, E. D.	Doyle, Nellie.	Gibbon, Minnie.
Cohen, Jennie A.	Drake, Nellie G.	Gilbert, O. G.
Cohen, Elsa.	Drew, Susan M.	Gillan, S. Y.
Coleman, Jennie A.	Droppers, Gertruida.	Gillick, Margaret.
Cole, Kathryn.	Dunbar, Sadie	Gillespie, Wm. W.
Collins, May.	Dudenbostel, Louise.	Gilligan, Anne.
Colquett, Elsie.	Durnin, Margaret.	Gingivine, Alice.
Comeau, Mary.	Durow, Martha.	Glatz, Emily S.
Comstock, Mabel.	Eastman, Eliz. T.	Glidden, Jennie.
Conlan, Grace.	Ehbetz, Pauline.	Goetz, Sophie.
Connell, Alice.	Ein Waldt, Minna.	Goldie, Annie I.
Connolly, Nellie.	Eiselmeier, John.	Goodman, Minnie B.
Converse, Della.	Eisan, Meta.	Goodwin, Alida.
Cook, May.	Elftman, Josephine.	Gould, Marie F.
Cook, Rose A.	Elliot, Nellie.	Gould, Lucius T.
Cooke, May K.	Elmer, Flora.	Gowran, Grace E.
Cooke, M. H.	Elmore, Elinor.	Grace, Mayme.
Cooke, R. L.	Elgeti, Elizabeth.	Graf, Lulu.
Coocoran, D. B.	Epstein, Tillie.	Gray, Marion.
Cornelius, E. C.	Engel, Clara.	Grebel, Anna.
Gory, Jesse F.	Engelmann, Carl.	Grebel, Johanna.
Corstevet, Alexander.	Erbach, Ida.	Griebsch, Max.
Corley, Mabel.	Faber, Rose E.	Griese, Charlotte T.
Costello, Margaret.	Fagan, Annie.	Griffin, Ellen J.
Costello, Anna.	Fallon, Margaret.	Griffiths, Minna.
Cotzhausen, Laura von.	Fahsel, Agnes.	Grissold, Anna M.
Couse, Nellie G.	Fairchild, A. N.	Grubb, Hattie L.
Crombie, Katherine.	Farley, Katherine E.	Gruber, Elsie.
Croppen, Lulu.	Fecht, Ella.	Grundler, Cora.
Crossdale, Nellie.	Fehrenkamp, Winnifred.	Grunetzmacher, I. A.
Culligan, Stasia.	Feix, Helen A.	Grunkan, Emma.
Culver, Lillie.	Fellows, Jane M.	Gueguierre, Magdalena.
Cummins, Julia.	Fiedler, Amanda.	Gueguierre, Sara.
Cunningham, Agnes.	Finan, Ella F.	Guile, Della S.
Curtis, Mrs. E. J.	Finan, John J.	Haack, Paula J.
Curtiss, Mrs. Maud E.	Fisher, Pheobe C.	Haessler, Betty.
Dalgleish, Catherine.	Fishman, Margaret.	Haessier, Henrietta.
Dalgleish, Nellie.	Fishman, Elizabeth.	Hahn, Wm. H.
Daniells, Jessie M.	Fitzsimmons, Martha.	Hainke, Elfrieda.
Dawe, Ella M.	Fitzsimmons, Mollie.	Haisler, Elizabeth C.
Dapprich, Mrs. E.	Fleischer, Herman.	Haisler, Louise M. ;
Davey, Minnie I.	Fleischmann, Lillian.	Hak, Grace.
Davies, Marie L.	Foley, Kathleen H.	Hak, Mary J.
Davidson, Elsie.	Foran, Mary.	Ha'e, Ethel.
Davis, Pauline.	Forrest, Ada A.	Hale, Winifred.
Dean, Gertrude.	Forrestal, Mary A.	Halfer, Mary S.
Dempsey, Flossie.	Fortier, C. A. A.	Hall, Florence M.
Dempsey, Fannie.	Foster, Ida A.	Hall, Marcella.
Dempsey, Mary J.	Foster, Jno. N.	Hamann, Friedrich.
Desmond, Theresa.	Foulkes, Eugenia M.	Hames, Anna M.
Devver, Emma J.	Fowler, Lotta B.	Hanaman, W. W. ;
Dick, Margaret A.	Frahm, Alvina.	Hannan, Joanna A.
Dick, Susie G.	Franey, Mary E.	Hannan, Katherine.
Dignan, Annie.	Frank, Helen M.	Hannan, Mary E.
Dignan, Kate.	Fraser, Rebecca.	Hardwick, Mrs. A.
Dillon, Lillie.	Fredrich, Margaret A.	Harkins, Ella.
Dillon, Helen S.	French, Margaret.	Harley, Katharine.
Dixon, Agnes M.	Freytag, Louis.	Harm, Alice.
Doerfler, Anna.	Fritsche, Gustav A.	Harney, Edith I.

PROCEEDINGS OF FIFTY-THIRD ANNUAL SESSION. 195

LIST OF MEMBERS—continued.

Harper, Maggie M.	Johnston, Susan.	Kuepper, Julia.
Harrington, Elizabeth T.	Jones, Annie M.	Kuehne, Anna.
Hauboldt, Laura.	Jones, Elizabeth.	Kuehnast, Ida E.
Hauser, Daisy A.	Jones, Alice B.	Kussel, Henrietta.
Hawks, Annie.	Jones, Hannah K.	Lachet, Marie A.
Hawks, Ida M.	Jones, Laura.	Lafin, Mary L.
Hayden, Lizzie G.	Jones, Ruth E.	Lage, Katherine.
Hayes, Mary E.	Jones, Sarah D.	Lakin, May M.
Hayes, W. A.	Judell, Anna.	Landgraf, Eda K. M.
Hayes, Margaret.	Juneau, Maud H.	Lantry, Alice F.
Hayes, Mary V.	Jungter, Augusta.	Lantry, Mary.
Heffernan, Anna.	Jung, J. L.	Larson, Lawrence M.
Helberg, Anna A.	Kabet, Amanda.	Lau, F. C.
Henderson, H. C.	Kagel, A. E.	Laureil, Antonie L.
Heid, Bertha.	Kahl, Henry.	Laughlin, L. M.
Heinemann, Maud R.	Kane, Marion R.	Leach, Carrie.
Heinemann, Stella.	Kane, Florence J.	Leard, Margaret.
Henes, Catherine.	Kanneberg, Clara E.	Lederer, Harriet S.
Heintzen, Lucy.	Karel, Flora.	Lee, Alice.
Heise, Dora.	Kaross, Ella B.	Leedom, Elizabeth.
Heitman, Alma.	Kaross, Martha.	Lehnhoff, Hattie.
Henika, Louis.	Karrasch, Anna.	Legreid, Roma G.
Henkel, Isabel.	Katz, Rosa J.	Leidel, Ida E.
Herbst, Fannie.	Katze, Miller A. C.	Leihammer, Isabelle A.
Herman, Esther.	Kaufert, Julia.	Lepech, Birdie.
Hesse, Henry D.	Kaufmann, Sarah.	Lemke, Chas. F.
Hewit, Angie.	Kavanaugh, Katherine.	Lesell, Anna.
Hey, Adelaide.	Keating, Alice E.	Leviash, Rose.
Heyn, Fannie.	Kenney, Thomas.	Lewy, Estelle.
Hickey, Louise.	Kenney, Margaret.	Lewis, Marie L.
Hickey, Ellen.	Kendrezan, James H.	Liebig, Elsa.
Hickey, Mary F.	Kelly, Joanna.	Liebman, Frieda.
Hickey, Sarah J.	Kelly, Mary T.	Lienhard, Henry.
Hickman, Addie F.	Kelly, Agnes.	Lingemann, Anna.
Hickox, Alice P.	Kelly, Alma.	Lingemann, Rose.
Hicks, Alice Swan.	Kelly, P. J.	Loeffler, Ella K.
Hill, H. D.	Kelly, Kate M.	Lomira, Maud.
Hill, Mary.	Kelly, Mary E.	Loomis, Lizzie.
Hocking, Mabel J.	Keller, J. M.	Loose, Emma.
Hoffman, Margaret.	Keller, Marie.	Loose, Herbert.
Hogan, Emalyn Z.	Kelsey, Rachel.	Luebke, Almira J.
Hogau, Katharine.	Kelsey, Katherine.	Luebke, Emma J.
Hogan, Laura.	Kessler, Doris.	Luebke, Ottilie E.
Hohgreffe, Anna.	Kierne, Mary E.	Lueders, Victoria.
Holcombe, Alice J.	Kiern, Grace B.	Luening, D. C.
Holcombe, Mary C.	Killian, Margaret.	Luzg, Mary L.
Holden, Chas. B.	Kippenberger, Frances.	Lumms, Katharine.
Holden, Helen M.	Kirby, Margaret.	Lusk, Grace A.
Hohnes, Mrs. Ruth.	Kirby, Nellie.	Lusk, Nealie.
Honadel, Isabella.	Kitchell, Anna.	Lynch, Ella M.
Hoppin, Edith.	Klein, Fanny C.	Lynch, May E.
Horning, Olive.	Kleist, Emmy.	Lyle, Edith K.
Horrigan, Anne.	Klippel, Vene.	Lytle, Anna W.
Hortor, S. C.	Knight, Gertrude.	Mace, Bessie B.
Houghton, Madge.	Koepfel, George.	MacGlees, Anna.
Houlan, Marion C.	Kofel, C.	Maher, Mary.
Howell, Alice M.	Koerner, Julia A.	Major, Jennie.
Howell, Anna.	Kohl, Anna L.	Malloy, Nora C.
Hughes, Florence.	Koeslag, Wilhelmina.	Malone, Julia.
Hughes, Emma M.	Kottnauer, Annette.	Maloney, Sara M.
Hull, Gertrude.	Kranzsch, Clara E.	Manger, Eleanore.
Hunt, Cora.	Krauslach, Kate.	Marchant, Marie.
Hurlbut, Lillian M.	Kress, Emma.	Marquardt, Ida A.
Ingalls, Mae C.	Krieger, Frieda.	Marshall, Alice V.
Ingalls, Frankie.	Kriesel, C. A.	Marshall, Kate C.
Isaac, Clotilde.	Kriesel, Myra C.	Martenson, Hattie.
Jacobson, Amelia.	Kristensen, Anna.	Martin, Katherine.
Jaehnke, Mary.	Kriz, Aggie B.	Martin, L. T.
Jelinek, Frances.	Kroening, Frank.	Martin, Mary L.
Jelinek, Marie.	Krueger, Carmilla.	Mater, Emma.
Jenison, Nancy B.	Krueger, Henry.	Marvin, Maude I.
Jennings, Aurolia.	Krueger, Marie.	Maynard, Vivian.
Jergenson, Ella L.	Krueger, Olive.	MacKenzie, Anna A.
Jern, Esther V.	Krug, Richard E.	MacKenzie, Lou.
Johnson, Annie E.	Kuenzli, Caroline.	McKenny, Chas.
Johnson, Nellie O.	Kuenzli, Clara C.	McCabe, Catherine G.

LIST OF MEMBERS—continued.

McCabe, Isabel.	Neubecker, Phoebe.	Prutsman, Paul E.
McCabe, Kate C.	Newbower, Florence.	Punch, Ella D.
McCabe, Mary E.	Nichols, Jessie L.	Quigg, Jane E.
McCabe, Mary.	Nicholson, Claire S.	Quinn, Jennie.
McCormack, Nellie.	Nicolaus, R. C.	Radcliffe, Margaret E.
McCusker, Anne.	Nilan, Margaret.	Rahr, Millie.
McCusker, May.	Noble, Ella E.	Rastall, Anna G.
McDonald, Mary G.	Nohl, Emelle.	Redfern, Mary E.
McDowell, Fannie.	Northern, Mary.	Reed, Geo. H.
McEathron, Lois.	Northrup, Mary A.	Reilly, Faun H.
McGroth, Mary M.	Noyes, Bertha.	Reilly, Grace M.
McGuigan, Annie.	Nosse, Elizabeth.	Reilly, Nellie M.
McHenry, Avis.	O'Brien, Mary F.	Reiss, Wallace.
McHugh, Annie.	O'Connor, Nellie.	Renz, Emilie.
McHugh, Jennie.	Officer, Florence G.	Reinke, Gertrude.
McIlree, Sarah J.	O'Hanlon, R. J.	Reynolds, Anna M.
McIver, Elizabeth.	O'Neil, Gertrude.	Rice, Sade E.
McKenna, Sara B.	Olcott, Emma.	Richardson, Mary.
McKillop, Nettie.	Oldenburg, Lucy.	Riebe, Bertha.
McLean, Lily I.	Oldewelt, Clara.	Riedel, Cathinka.
McLonegan, Chas. E.	Olmstead, Bertha.	Riedel, Rudolph.
McLonegan, Mrs. Chas. E.	Olsen, Julia E.	Rieger, Emily M.
McMillan, Jean.	Olsen, Theo. B.	Ries, Jessie M.
McMinn, Amelia.	O'Malley, Helen G.	Riordan, J. P.
McN Campbell, Julia.	O'Neil, Mamie.	Rissman, Edward.
McRavey, Marion.	Ormsby, Anna C.	Robrahn, Frances.
Mechler, Lucia A.	O'Sullivan, Eugenia.	Rodie, Florence B.
Meckenhauser, Olga.	Ott, M. Adelaide.	Rodman, Macy D.
Meiners, Louise.	Otter, Mary.	Roeffs, Constance.
Meinecke, Emily.	Otterol, Evelyn.	Roethke, Louise M.
Meissner, Florence.	Owens, Anzonetta.	Rogers, A. J.
Mellen, Jane F.	Palutzke, Mary.	Rogers, L. Clare.
Menzel, Flora.	Palmer, Julia.	Rose, Elizabeth.
Meredith, Sara A.	Papenhagen, Martha.	Ross, Gertrude.
Merkt, Fannie E.	Parnkoff, Hattie.	Ross, Clara.
Mayer, Cora E.	Parsons, Ada M.	Rosenthal, Annette.
Mayer, Meta D.	Partenfelder, Martha.	Ruebhausen, Ella E.
Michaelis, Sophia.	Pashelles, Carrie.	Ruhnke, R. H.
Miller, Ida.	Pashelles, Josephine I.	Ryders, Ella E.
Miller, I. E.	Patek, Alma.	Ryan, Cassie.
Miller, Leslie.	Patek, Eva.	Sabin, Ellen.
Miller, Myrtle.	Patzer, C. E.	Sanner, Grace E.
Miller, Rose B.	Patzer, Gertrude.	Sardjeant, Tillie.
Mills, Katharine.	Patzer, Mrs. C. E.	Saridakis, Frank.
Mills, Lillian.	Peabody, Amy E.	Sarnow, Emma.
Milnetz, Lillie L.	Pearse, C. G.	Saveland, Linda C.
Minahan, Ellen.	Pearse, C. G. Mrs.	Sandenwalker, Nina C.
Mitchell, I. N.	Peckham, Mary G.	Scoets, Gertrude.
Mitchell, Margaret E.	Peters, Susie M.	Schaffrath, Wm.
Moffet, Mae S.	Petersen, Pauline.	Scheinert, Amanda M.
Monaghan, Teresa F.	Petersen, Minnie J.	Scheinert, Emma M.
Moody, Mary A. T.	Petersen, Pearl.	Schenk, Margaretha.
Moore, Ruth M.	Pettapiece, Lauretta E.	Schmidtill, Babette.
Moran, Berdice.	Pfoertsch, Amelia.	Schmidtill, Henrietta I.
Moran, Florence.	Pfoertsch, Dina.	Schmit, Margaret.
Moran, Elizabeth M.	Phalen, Dorothy H.	Schmitz, Hildgard.
Moran, Harriet E.	Phelps, Ella.	Schmellenmeyer, Fanny.
Morgan, Elizabeth.	Phillips, Mary.	Schneider, Emma.
Morris, Mary.	Pinning, Emma M.	Schneider, Mary.
Morris, Josephine.	Pokorny, Lucy.	Scholz, G.
Morse, Alice.	Pollock, W. J.	Schroeder, Elizabeth H.
Mosher, Cora E.	Porter, Adela K.	Schroeder, Ella L.
Mosher, Estelle.	Post, Harriet L.	Schroeder, Ida H.
Moss, Lilly.	Potter, Mable E.	Schuerbrock, Josephine.
Moulton, Lucretia I.	Pranke, Helen M.	Schuerbrock, Adela S.
Mowry, Vivian.	Pratt, Alice!	Schuette, Marie A.
Mueller, Amelia.	Pratt, Mabel.	Schuler, D. H.
Mueller, Evelyn A.	Pratt, Minnie.	Schuler, Katherine.
Mueller, Lena.	Pray, C. E.	Schumacher, Otto.
Mueller, Herman.	Pruess, Selma.	Schuman, E. W.
Mueller, Tillie D.	Price, Hannah E.	Schuppert, Mathilda.
Mulloy, Mary.	Price, Winnifred.	Schwartz, Hattie A.
Murphy, Josephine.	Prideaux, Annette.	Schwartz, Laura.
Murphy, Mary G.	Prideaux, Katherine.	Schwartz, Meta.
Murphy, J. V.	Prinz, Elsa.	Scotfield, Katherine G.
Nerman, Anna.	Promberger, Wm.	Sears, C. H.

LIST OF MEMBERS—continued.

Seidl, Louise.	Skiff, Mattie.	Van Horne, Frederic M.
Seims, Ella.	Skiles, Daisy.	Vantine, Lewis.
Sell, Wm. F.	Slawson, Anna A.	Von Gumpert, Emma.
Senti, Martha.	Sloan, Elizabeth L.	Vollmar, Carrie S.
Severance, Pearl.	Slosson, May.	Voss, C. J.
Shaughnessy, Evelyn.	Smith, Alice B.	Wackler, Katharine.
Shaughnessy, P. H.	Smith, A. E.	Wagner, Frieda.
Shearer, Chas. E.	Smith, Marion A.	Wagner, Adele.
Sheehan, Julia A.	Smith, Harriet E.	Wagner, Paula.
Shields, Bessie C.	Smith, M. Vail.	Waig i, Eleanor.
Shields, Mary D.	Smith, Nellie M.	Wakefield Emma.
Shimm, Lucy M.	Smityman, W. L.	Waldron, Jessie E.
Shinnick, Julia I.	Soik, Mattie M.	Walsh, Isabel R.
Sholberg, Nicolas.	Somers, John J.	Walker, Winifred.
Shorthill, Lillian.	Sontag, Lillian.	Walker, Lillian.
Shrieves, Emma W.	Sorenson, Sara.	Wallber, Irma.
Sidler, Agnes.	Sprague, Florence.	Walling, Ruth.
Sidler, Marie.	Spalding, H. S. Rev.	Walsh, Frances.
Siefert, H. O. R.	Spangenberg, Clara.	Walsh, Sarah C.
Siegmeier, Hans.	Spangenberg, Thekla.	Warner, Dezelle T.
Siegmund, Chas. H.	Spehr, Otto.	Warner, Nellie.
Silbar, Burnette.	Spencer, Bettie B.	Warth, Bertha.
Silver, Fanny.	Springer, Felicia.	Wasweyler, Anna G.
Simonds, Lillian.	Springer, Norma G.	Watermolen, Belle.
Simmons, Wm. F.	Sproat, Katharine.	Webb, Lindsey.
Snyard, Prudence E.	Spyker, Mattie A.	Weber, Nellie C.
Sister M. Paul, O. S. D.	Standish, Elizabeth.	Webster, Chas. D.
Sister M. Antonius, O. S. D.	Starkey, Mary.	Weihe, Herman J.
Sister M. Kathleen, O. S. D.	Steen, Adelaide M.	Weiland, Margaret.
Sister M. Kostka, O. S. D.	Steiner, Louise A.	Weinstein, Albertine.
Sister Mary Canice, O. S. D.	Stern, Julia.	Weiss, Laura.
Sister M. Lambertine, O. S. D.	Stern, Leo.	Welch, Alvira.
Sister M. Evanghrt, Acad. of Our Lady of Mercy.	Stevenson, Jane A.	Welch, Bessie.
Sister M. de Sahs, Acad. of Our Lady of Mercy.	Stewart, Nettie E.	Welch, Gracia.
Sister Agnes, Acad. of Our Lady of Mercy.	Stillman, Clara L.	Welch, Isabella.
Sister Bernardine, St. Patrick's School.	Stockhausen, Emma von.	Welch, Nellie A.
Sister Aquinas, St. Patrick's School.	Strass, Alice.	Welsh, Lucy.
Sister Mercedes, St. Patrick's School.	Straube, C. B.	Welsh, Mary.
Sister M. Henrietta, B. V. M.	Street, Ida M.	Weid, Rena.
Sister M. Eusebia, B. V. M.	Strohm, Etna M.	Weltzien, Lena M.
Sister M. Humberta, B. V. M.	Strong, Emily W.	Wendt, Lillie E.
Sister M. Alexia, B. V. M.	Suckow, Elsie.	Wenzell, Rilla.
Sister M. Placidia, B. V. M.	Suckow, Minnie L.	Werner, Fred W.
Sister M. Lawrence, B. V. M.	Sullivan, Anna R.	West, A. P.
Sister M. La Salle, B. V. M.	Sweet, Nettie.	Wettig, Anna.
Sister M. Maud, B. V. M.	Taughner, Mary T.	Wettig, Caroline.
Sister M. Mabel, B. V. M.	Taylor, Julia E.	Wettstein, Frances.
Sister M. Teresita, B. V. M.	Tennant, Elsie.	White, Edith.
Sister Mary Humbert, St. John's Catholic School.	Teweles, Lotta.	White, Mary E.
Sister Mary Samuela, St. John's Catholic School.	Ehal, Helen B.	Whitehead, Bertha E.
Sister Mary Teresita, St. John's Catholic School.	Thiele, Frieda E.	Whitley, Alice S.
Sister Mary Genevieve, St. John's Catholic School.	Thies, Lillian.	Wiegand, Marie.
Sister Mary Andreae, St. John's Catholic School.	Thies, Alice.	Wiemer, F. M.
Sister Mary Eugenius, St. John's Catholic School.	Thompson, Clara L.	Wilde, Frank.
Sister Mary Aurelia, St. John's Catholic School.	Thompson, Ervin.	Wilde, Samuel.
Sister Mary Athanasius, St. John's Catholic School.	Thornborg, Edith.	Williams, Anna.
Sister Mary Irene, St. John's Catholic School.	Threadgold, Minnie.	Williams, Frances M.
Sister Mary Gonzaga, St. John's Catholic School.	Tidmarsh, Genevieve.	Williams, Katherine R.
Skelding, Mary.	Tiefenthaler, Laura.	Williams, Mary T.
	Tiefenthaler, Leo.	Wilsey, Myrta.
	Tiefenthaler, P.	Wilson, Adelaide.
	Hilorn, Louise.	Wilson, H. B.
	Todd, S. W.	Winkler, Rosalie.
	Tollefson, Emma H.	Winton, Florence S.
	Tomalty, Mary.	Witt, Robt. H.
	Toohy, Maria.	Worthington, Fred.
	Torney, Julius L.	Worms, Jessie.
	Trapschuh, Belle.	Wright, Helen Ethel.
	Tschoepe, Bertha.	Wright, Inez E.
	Tyre, Anna.	Wuerst, Frances.
	Tyre, Olga.	Yorgy, Sarah E.
	Uber, Anna.	Zahn, Nettie.
	Uber, Matilda.	Ziegler, Margaret J.
	Ulbricht, Lydia A.	Zimmermann, C. F. A.
	Ulrich, John.	Zimmermann, Viola M.
	Utermark, Henrietta.	Zinns, Ilma.

LIST OF MEMBERS—continued.

Zinns, Roland. Zoerb, Linda E.		
MINERAL POINT.		
Bergen, J. F. Kuhnhehn, Amelia. Parmley, H. J. Parmley, Jennie A. Parmley, Abbie E. Weidenfeller, Ada.		
MONONA, MINN.		
Huebsch, Geo. H.		
MONDOVI.		
Freeman, W. S.		
MONTELLO.		
Bartlet, A. H. Bissell, Leila.		
MONTICELLO.		
Isely, Effie L. Ream, W. T.		
MONROE.		
Byers, Grace. Corson, Harriet. Freeman, E. McDowell, Mary E. Schiesser, Margaret. Smock, Kathryn. Swartz, G. W. Van Wagner, Emma.		
MOSINEE.		
Schwalbe, W. A. S.		
MT. HOPE.		
Corlett, Emily.		
MT. HOREB.		
Kelly, W. H.		
MUKWANAGO.		
Fowlie, William.		
NEENAH.		
Beeman, E. M. Cleasby, E. A. Helmer, Carrie M.		
NEILLSVILLE.		
Kienholtz, A. A. Wood, L. W.		
NEW HOLSTEIN.		
Flower, D. E.		
NEW LISBON.		
Clifton, A. R.		
	NEW LONDON.	
	Browe, O. P. Hamilton, W. J. Johnson, Harriet. Grier, Ethelwyn. Lelland, Edith. Swelt, Maud. Stanley, C. B.	
	NORTH MILWAUKEE.	
	Lilly, John. Sievers, Peter.	
	OAKFIELD.	
	Foote, E. D. Hansen, A. F.	
	OCONOMOWOC.	
	Kellogg, Jessie M. Kolb, Philip A. Owen, Julia. Tanner, Genevieve.	
	OCONTO.	
	Coen, Ben. F. Four names lost in membership book. Taylor, Adelaide.	
	OMRO.	
	Bloom, Anna. Lewis, Cassie. Rice, L. D. Sheldon, E. E. Thatcher, Lucy.	
	OSCEOLA.	
	Cantwell, Cornelia. Murphy, Luke.	
	OSHKOSH.	
	Alvord, Katherine S. Anderson, W. T. Atherton, Lewis. Bowmen, Elsie L. Criggs, L. W. Blark, Harriet E. Coolidge, W. F. Darling, Grace R. Dresden, B. M. Duggan, Laura. Everett, Clara. Fling, H. R. Genske, Clara. Halsey, R. H. Henderson, Josephine. Henley, Faye. Hewitt, W. C. Hinkle, J. M. Jenkins, Hester. Kimball, Lillian G. Magee, Harriet C. Marvin, Jennie G. McFadden, Mary I. Mitchell, F. E. Nugent, Anna. Nevins, C. V. Oldenburg, F. W.	
		Overton, Geo. Overton, Mrs. Geo. Oneill, A. B. Paulu, Emanuel. Peeke, Eilen F. P. Rooney, Annie L. Ryan, Bessie. Scofield, Belle. Shepardson, Grace L. Small, M. H. Smith, A. J. Stevens, Elizabeth. Summers, L. L. Swart, Rose C. Trettlen, A. W. Turner, Mary. Webster, Emily F.
		OXFORDVILLE.
		Miller, B. E.
		PALMYRA.
		Norris, W. K. Thorn, A. J.
		PARK FALLS.
		Sullivan, Mary.
		PESHTIGO.
		Angle, Rilla. Carter, Winnie. Field, Ellen E. Granger, Clifford E. Klingholz, Oscara. Porter, Ruth L. Thatcher, Carrie. Wendt, Robert.
		PEWAUKEE.
		Holt, Ivah. Vance, Elenor. Zellhofer, Franklin.
		PHILLIPS,
		McNely, May.
		PLATTEVILLE.
		Beers, May. Brigham, Agnes Otis. Carpenter, Myrtle L. Gray, O. E. Livingston, J. W. Montgomery, Jessie B. Royce, A. M. Ruble, J. J. Schuster, Clara. Schuster, O. J. Todd, Jessie. Williams, W. H.
		PLYMOUTH.
		Cole, Jessie M. Collins, W. B. Roecker, W. F. Thomas, Nellie.

PROCEEDINGS OF FIFTY-THIRD ANNUAL SESSION. 199

LIST OF MEMBERS—continued.

<p>PORTAGE. Clough, W. G. Cushman, Sylvester.</p>	<p>Dysart, Lulu M. Erskine, Ethel H. Evans, Elizabeth. Fahey, Catherine. Fahey, Genevieve B. Fahey, Mamie A. Fahey, Mayme R. Fahey, Nellie. Foote, Elizabeth. Foreman, Ella. Fries, Dona. Fry, Harriet. Gabriel, Lucial M. Gallaher, Mary L. Gannan, Josephine E. Galloway, Abby M. Garvey, Kate. Geraghty, Sara L. Gibbons, Mamie. Gilday, Kathryn L. Gorton, Anne. Govier, Ida L. Graham, Verna B. Graves, Lucia. Gray, Rilla Squier. Grimes, Katharine. Guthrie, Dorothy. Haidle, Edith. Hanley, Elizabeth A. Hanson, Clara E. Hanson, Lilly C. Hanson, Elinor A. Hanson, Edith. Harcus, Grace. Hart, Margaret. Heiz, Marie F. Hermes, Mattie C. Hibbard, D. O. Hilt, Kathrine. Hincliffe, Jessie A. Holmes, Laura L. Hood, Elizabeth. Hughes, Della. Hyde, Cassie. Jarvis, Margaret. Jensen, Jessie C. Jones, Cassie. Jones, Mabel. Jones, Elizabeth. Jones, Lillian E. Johnson, Amanda A. Kelly, Kate S. Kemler, Virginia. Kincaid, Margaret S. Knight, Margaret. Lannerd, Willard. Lawrence, Jeannette. Lewis, Eva. Lewis, Mary E. Lingsweiler, C. L. Mac Nees, E. Ellen. Mainland, Barbara. Mainland, Christie S. Martin, E. S. Milliman, Louisa J. Mohr, Nellie K. Morey, E. V. Morris, Sarah. Murphy, Gertrude. Murphy, Mayme. Murphy, Mary A. Naylor, Ida B. Near, Mary E. Ne Collins, J. C. Needham, Nellie. Nelson, Carrie B.</p>	<p>Nelson, Burton E. Noble, Ellen M. Oliver, Emma L. Oliver, Olive B. Olson, Mamie L. Palmer, Mamie R. Phillips, A. L. Pievoth, A. M. Pond, A. C. Porter, Susan M. Proctor, Hettie L. Rapps, Carrie. Redel, Marie. Relph, Gertrude. Roe, Nettie E. Rowan, Catharine. Rowan, Mary V. Rowland, Elizabeth. Rowlands, Mabel. Runyon, Carrie Belle. Russell, H. M. Schultz, Henrietta. Scofield, Jennie. Secor, Frances A. Shultz, Helen. Smith, Marion. Smith, M. L. Stanley, Ethel. Speer, Gertrude. Tait, Ellen R. Tait, J. W. Thayer, Mrs. Jessie E. Trist, Grace. Trull, Lulu. Tuttle, Eva. Vallie, Bessie C. Vrooman, C. J. Wallace, Beulah. Watts, Lillian. Wellman, Bruner. Wilbour, A. J. Williams, Jeanette. Williams, Jennie. Winne, A. J. Winne, May E. Wolfe, A. L.</p>
<p>PORT WASHINGTON. Barth, Minna A. Blandin, A. A. Hack, Miss. Harms, Agnes, M. Lynch, Elizabeth. Schmit, Margaret E. Scott, Lenore M. Thompson, R. C. Young, Christine S.</p>		
<p>POYNETTE. Powers, John F.</p>		
<p>PRAIRIE DU CHIEN. Utendorfer, W. E.</p>		
<p>PRENTICE. Austin, A. J. Fitzgerald, Alice. Singleton, H. T.</p>		
<p>PRINCETON. Beebe, Joanna. Kelley, Geo. V. Olman, O. C.</p>		
<p>RACINE. Abbott, Ella E. Anderson, Ida. Augustine, Albert. Babcock, Ella L. Bagnall, Bessie M. Baird, Ethel C. Baker, Herbert. Bates, Ethel M. Bell, Florence. Blackhurst, E. W. Bolton, L. Bolton, Grace M. Bosustow, Lillian. Brewer, Phebe E. Brownell, Dona. Bunker, Norma E. Bushman, Lillian A. Caine, B. Carroll, S. S. Chadwick, C. M. Cholvin, Inez A. Christensen, Emma D. Church, Anna. Clanev, Nan. Clancey, Bessie. Cleary, T. L. Claton, G. R. Clunie, Edith B. Colbert, Cecelia. Collier, E. Collier, Louise. Colville, Jean. Craig, Camille. Craig, Rose. Craker, Elsie C. Dana, Abbie M. Davis, Dewey F.</p>		<p>RANDOLPH. McCrary, E. W.</p> <p>RANDOM LAKE. Kocker, R. J.</p> <p>REEDSBURG. Baldwin, J. B. Baldwin, J. B. Mrs.</p> <p>REWEY. Ruble, J. J.</p> <p>RHINELANDER. Babington, Maude. Bonell, Della. Braham, Harriet. Clark, Amy. Cook, Nettie M. Doern, Carrie. Jennie, E. K. Higgins, Mary. Hors, Belle. King, Anna.</p>

LIST OF MEMBERS—continued.

Lally, Grace. Lowell, F. A. Mason, F. M. McKenzie, Ella. McQueen, Belle. Miller, Elizabeth. Pinkerton, Jennie. Plugh, Nellie. Winfield, Carra. Wiese, Eugenie. Vetting, Ida,	ROSENDALE. Marchant, Ethel.	SILVER LAKE. Kerwin, J. J.
RICHLAND CENTER. Bowden, Josephine. Burns, R. H. Edsall, Winifred. Foley, May G. Hawkins, Margaret. Logue, J. B. Logue, Elmer. Pratt, G. E. Thompson, A. A. Tuttle, A. H. Wightman, Nellie.	SAUK CITY. Brandt, R. A. Merk, Helen. Merk, Josephine.	SOUTH MILWAUKEE. Bergen, Paul. Donohue, Agnes. Dy, r, Mary. Fink, Martha. Fink, Ella L. Hanrahan, Ella. Ryal, Laura. Shafer, Maud. Trabue, Elsie. Weisend, W. F. White, Edith. Zilg, Eulalie.
RIB LAKE. Gunderson, Nicholas.	SCANDINAVIA. Everson, O. K.	SPARTA. Barnes, Maud H. Dixon, Laura E. E-ch, Ella L. Freeman, Lillian. Freeman, Nellie. Harris, Caroline. Jack, Frank M. Krause, Julia A.
RICE LAKE. Snowdon, A. A.	SCOFIELD. Pelishek, F. R. Pelishek, Mrs. F. R.	SPOONER. Adams, J. G. Porth, A. H.
RICHFIELD. Cushman, Mary.	SEYMOUR. Armitage A. W. Water, Minnie A.	SPRING VALLEY. Keyes, H. D.
RIPON. Bailey, Grace. Bessey, Mrs. J. W. Bonnell, Alice. Bushnell, Jessie. Clark, E. W. Cutler, G. W. Fostman, Nina. Hall, Mrs. Ruth. Hill, Edith. Hughes, Helen. Johnson, Lillian. Kelley, Clara M. Lobb, Ida. Luther, E. L. Milliken, C. S. Moran, Nellie A. Odes, H. M. Spooner, Mrs. J. E. Trier, Laura.	SHARON. Pollinger, Nellie. Ruck, Roy W. Harrison, Eva M. Potter, Grace E. Stauff, John H.	ST. CROIX FALLS. Lusk, W. F. Monty, C. W.
RIVER FALLS. Ames, J. W. T. Brier, W. J. Clark, Myrtes. Clark, L. H. Sabewitz, Ellsbeth. Sims, J. T. Sims, Mrs. J. T. Wilson, H. L.	SHAWANO. Cady, N. T. Donelly, Alice M. Leidenburg, J. Mathews, Sarah E. Roberts, L. D. Silvester, Sarah G.	ST. NAZIANZ. Birkle, Wm.
ROCHESTER. Burns, Myrtle.	SHEBOYGAN. Adams, Robt. W. Ashby, Harriet. Broer, Mrs. F. W. Brown, Ida. Buck, Mary L. Buck, Lona. Dynes, Margaret. Everhard, Bessie. Geussenhainer, G. Golden, Etta M. Hardaker, E. J. Johnson, Reena. Kingsford A. C. Leverenz, H. F. Lowe, C. H. Messenger, Minnie. Reichert, Lorena. Sedgwick, Bessie. Sedgwick, Helen. Schussman, L. G. Shepard, Elizabeth. Tarnutzer, A. D. Thomson, Jane. Thompson, Claude. Walvoords, J. G. Winkler, Theo. Wolf, Paula K.	ST. PAUL, MINN. Ewing, A. L.
	SHERIDAN. Jeffers, Ellen.	SIEVENS POINT. Bradford, Mary D. Collins, Jos. V. Culver, G. E. Fitzgerald, Josephine. Fuller, May. Hyer, F. S. McComb, H. G. Olson, David. Olson, Mrs. D. Pray, T. B. Roberts, Ruth. Sandford, A. H. Showers, F. F. Stewart, Flora E. Wood, M. N.
		S. OUGHTON. Case, Effie. Johnson, W. R. Schrode, Hulde. Showers, Eve.

LIST OF MEMBERS—continued.

Turner, M. Ada.
Weber, Aug. W.
STURGEON BAY.

Eichinger, J. A.
Jenkins, Agnes O.
Lawrence, A. W.
Leete, H. N.
Paine, Gertrude E.
Stangel, Chas. G.

SUN PRAIRIE.

Eddy, Robt. J.
Hayden, Grace.
Norton, Edna F.

SUPERIOR.

Blood, Emma.
Burr, Agnes E.
Clemens, P. B.
Cowie, Lillian G.
Cronk, Mrs. Lizzie D.
Darrow, Retta.
De Lou, Edith.
Durley, Lucile.
Early, Agnes E.
Gillett, A. D. S.
Harrington, Amelia.
Hembat, Phil. H.
Hewson, Caroline.
Hill, Florence.
Holman, Mabel.
Johnson, Ellen.
Larson, Lizzie.
Larson, Marie.
Lynch, S. A.
Macdock, W. E.
McCaskill, V. E.
McCormick, Elizabeth.
McNeill, I. C.
Monroe, Jennie.
Mrytetus, Jessie.
Newman, Avis.
Paddock, Eva.
Payn, Nina B.
Pelletier, Maud.
Purdy, Effie G.
Rasmussen, Ethora.
Regan, Nellie.
Sechler, Grace.
Shong, A. C.
Sweetnam, Ina L.
Thorsell, Esther.
Watkins, Abbie.
Williams, Edith.

SUSSEX.

Stier, J.

TAYLOR.

Relyea, Norma Jane.

THIENSVILLE.

Kiekhaefer, Martha F.
Plagemann, F. J.
Schaeffer, Julius W.

THREE LAKES.

Merrifield, Helen.

TIGERTON.

Hardgrove, J. H.

TIPPECANOE.

Everson, F. H.

UNION GROVE.

Dunbar, Frank W.
Dunbar, Mrs. F. W.
Ramsey, Florence.
Rush, Alice M.
Zimmerman, G. J.

VIROQUA.

Colburn, W. B.
Gardner, H. L.
Richards, Alice.
Ramsey, Florence.
Rust, Alice M.
Wilson, L. O.

WALDO.

Thiel, R. B.

WALWORTH.

Hall, W. O.

WAUSHARA CO.

Thompson, T.

WATERLOO.

Hatch, K. L.
Jausch, Emma.
Whipple, H. A.

WATERTOWN.

Barber, Laura.
Bramer, Alice.
Hutler, Robt. H.
Gohlke, Geo.
Kopp, Ida.
Owen, Ralph.
Roseman, W. P.
Viebahn, C. F.
Viebahn, Mrs. C. F.

WAUBENO.

Stinsler, O. L.

WAUKESHA.

King, E. W.
Bidwell, Emily.
Bidwell, Ida.
Blakeslee, Lella J.
Connell, Carrie.
Connell, Catherine.
Edwards, Ida M.
Fehlandt, Ella E.
Hutton, A. J.
James, Mary.
James, B. B.
Mueller, Emy C.
Rennebohm, Adelia.
Rockafellow, Julia.
Ray, S. B.

Sleep, Mabel.
Swan, Franc.
Walton, Martha C.

WAUPACA.

Banting, G. O.
Chamberlain, Marie.
Miller, Mabel.
Rogers, Althea T.

WAUPUN.

Loomis, G. F.

WAUSAU.

Becker, Helen.
Becker, Marie.
Connelly, Emma.
Farrell, W. J.
Farrell, Lucinda, Mrs.
Hurley, Margaret.
Parin, C. C.
Scholes, S. R.
Tobey, S. B.
Wells, O. E.

WAUSAUKEE.

Doudna, Frank I.
Doudna, Lenore Emrey.

WAUWATOSA.

Acker, Eva May.
Armstrong, Mary.
Bleedorn, Bertha.
Chamberlin, E. Kate.
Daly, Elizabeth.
Dreutzer, Ruth A.
Everell, Daisy K.
Grandy, Mabel.
Johnson, Minnie.
Jones, Thos. R. Lloyd.
Jones, Winnifred E.
Layer, Martha G.
Nickerson, Frances W.
Sell, Martha.
Smith, G. E.
Smith, Janet M.
Walker, Margaret F.
Wood, Katharine.
Zenk, Martha.

WAUZEKA.

Porter, O. B.

WEST ALLIS.

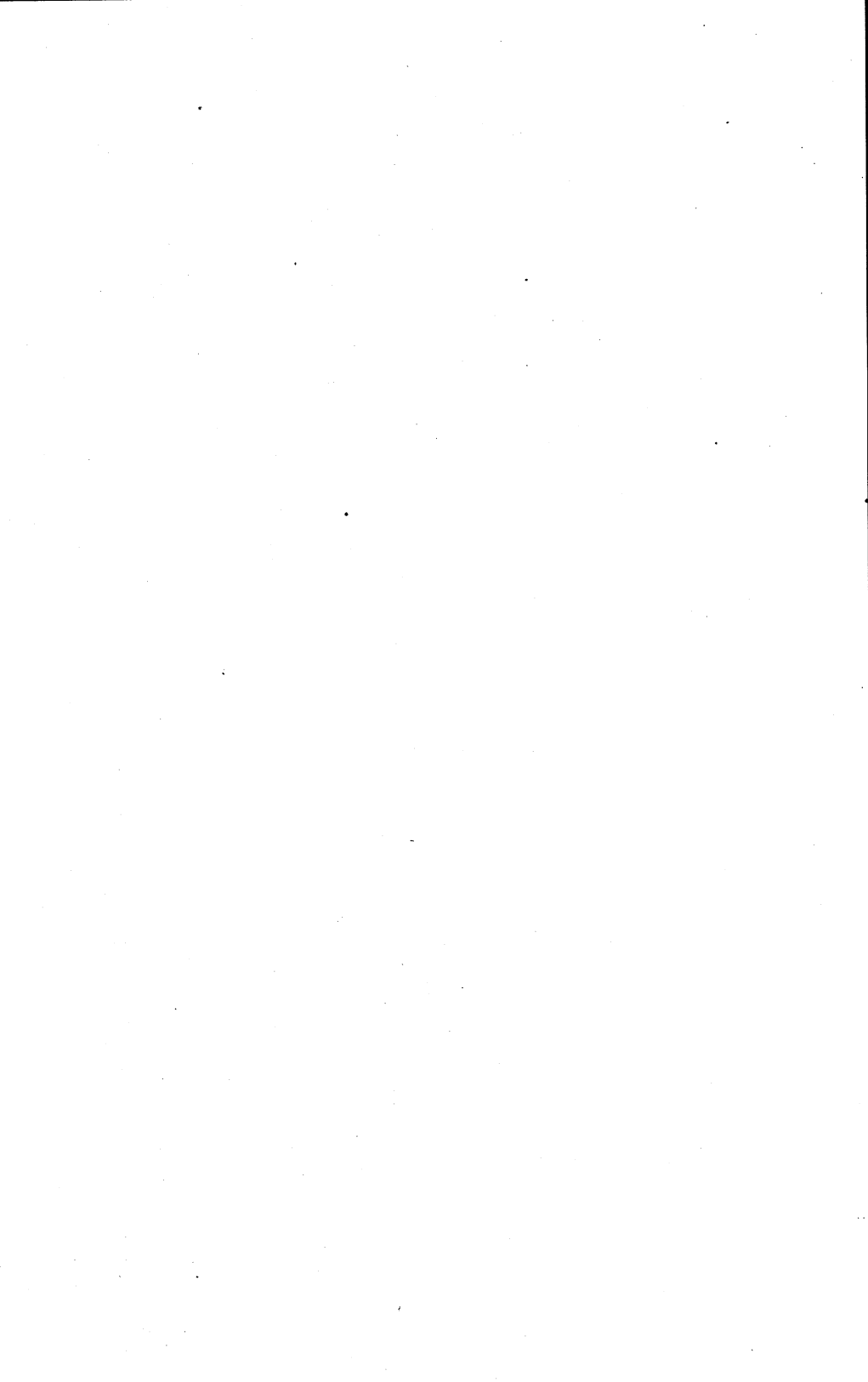
Boss Lorena.
Bowes, Bessie.
Schaub, A. E.

WEST BEND.

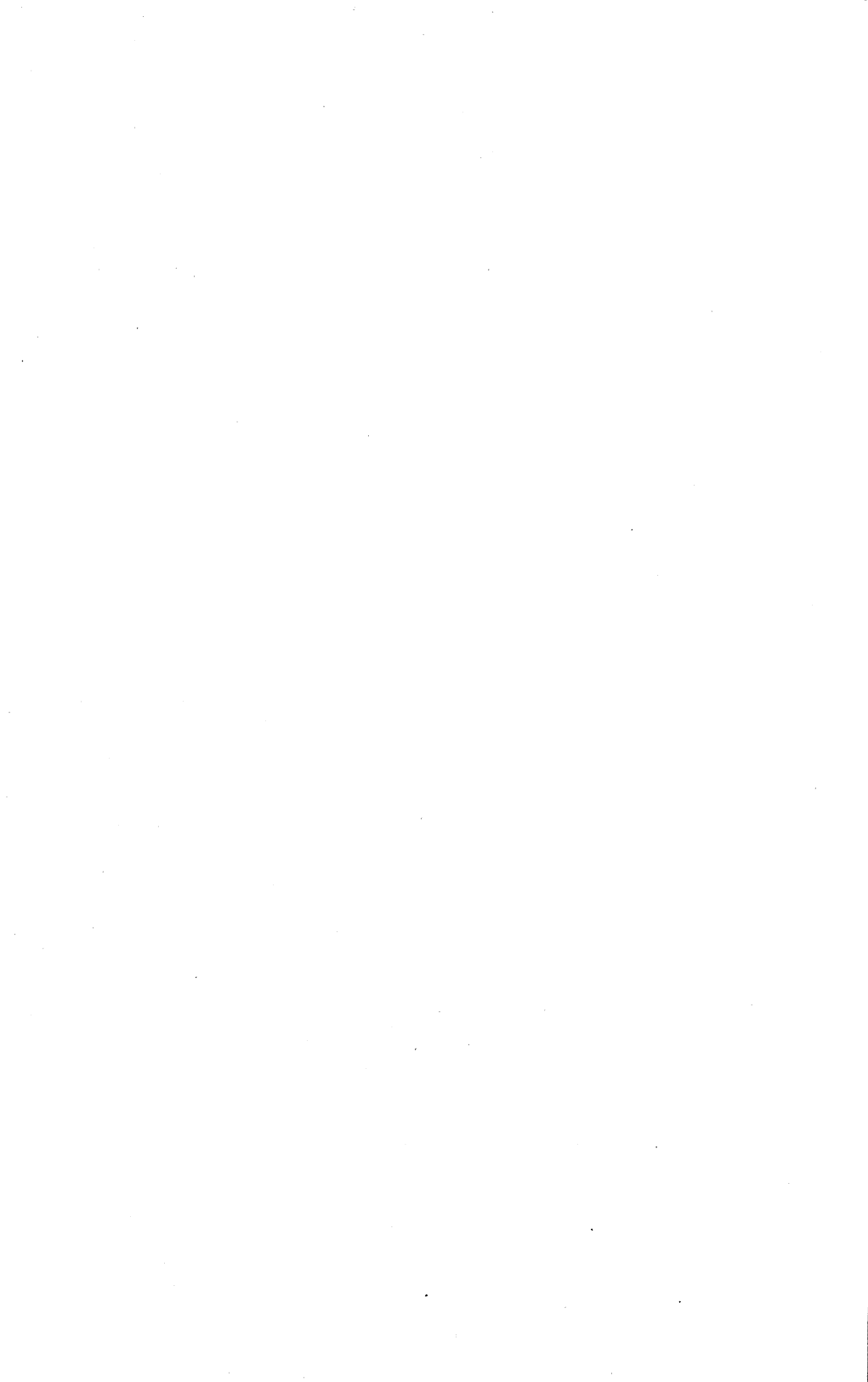
Baer, Arthur C.
Detmeg, Lulu.
Dunham, Elizabeth.
Gossel, Anna.
Kuechenmeister, Martha.
Kuechenmeister, Florence.
Leins, Emma.
McCormack, M.
McLane, D. E.

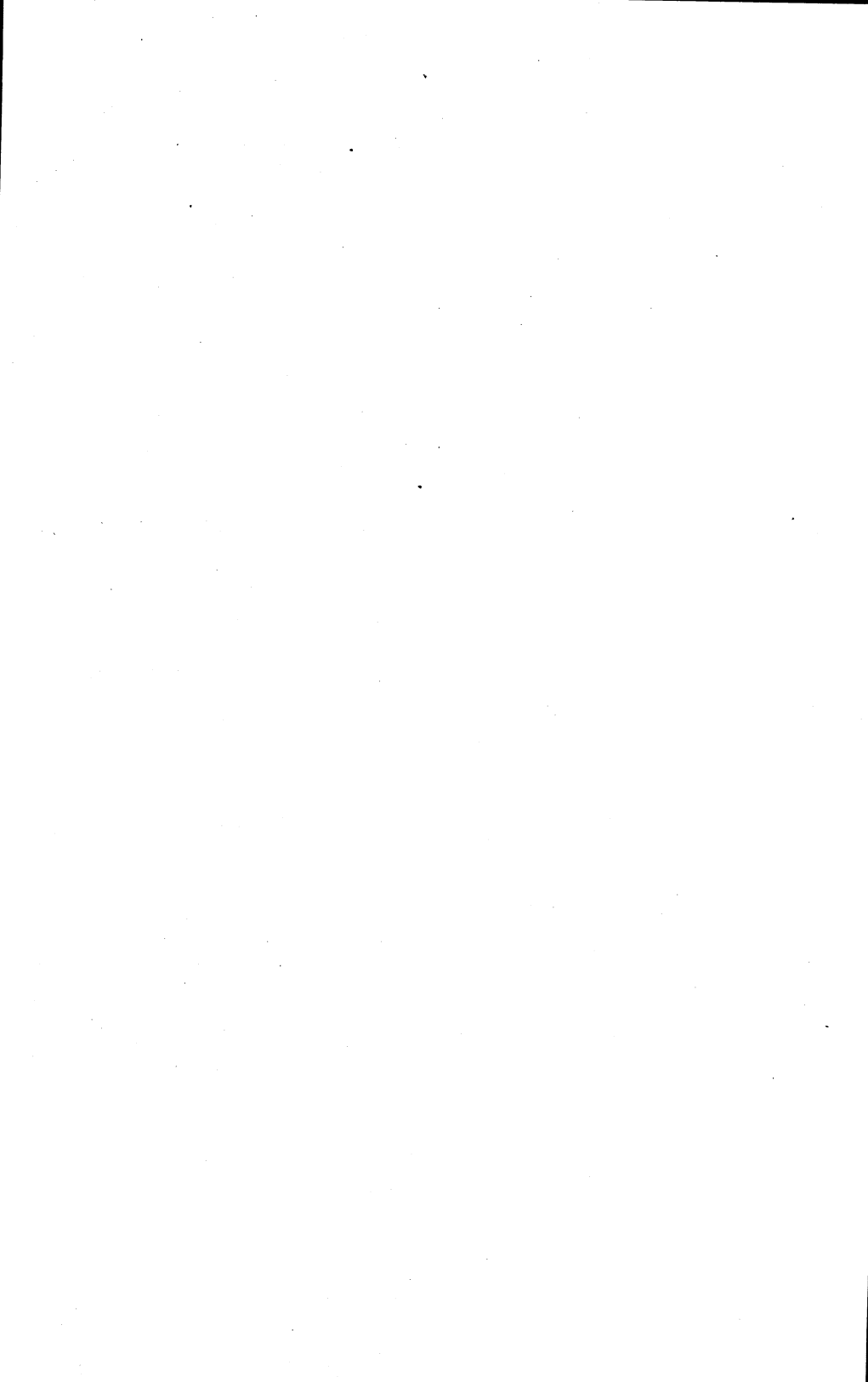
LIST OF MEMBERS—continued.

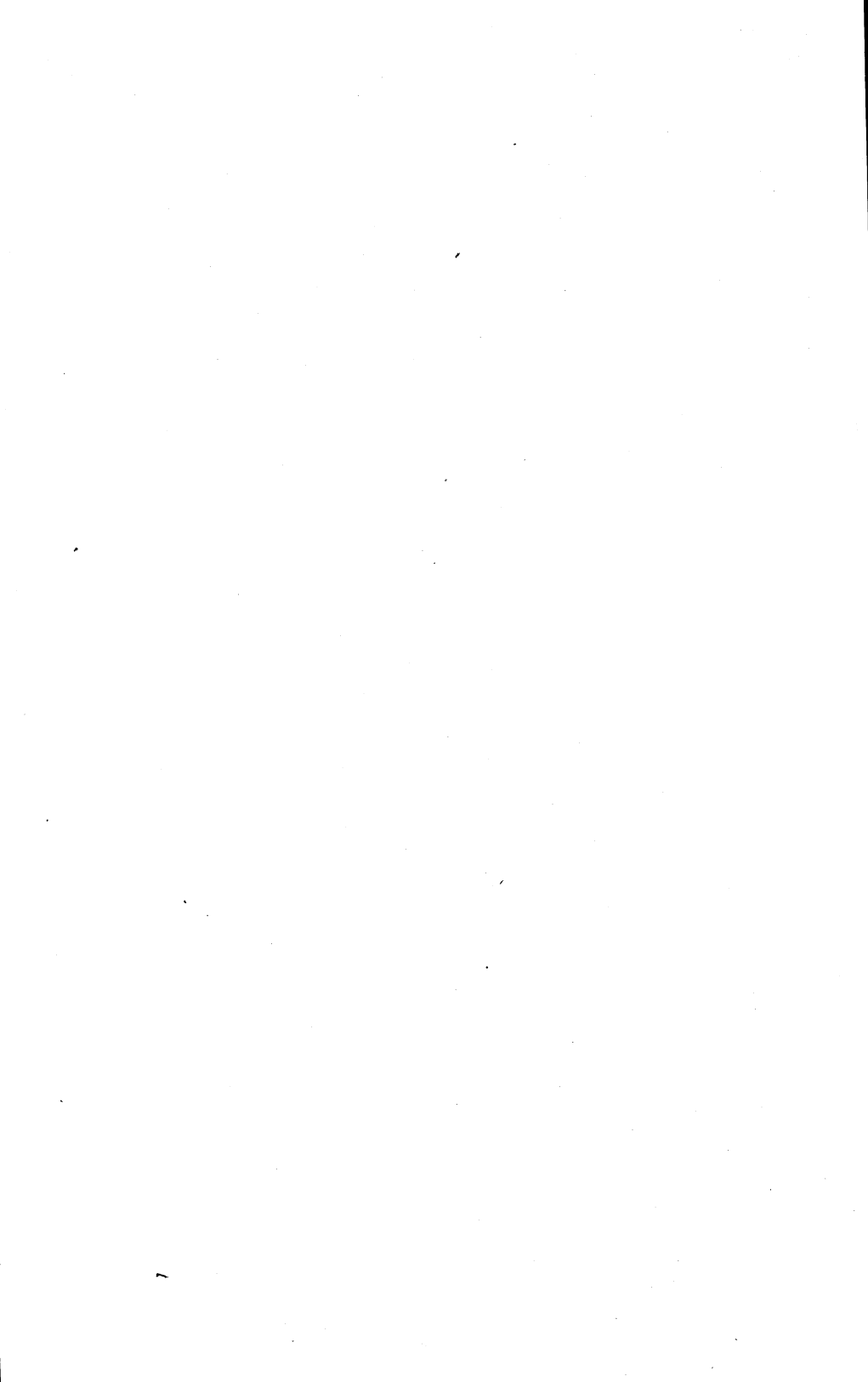
Mooers, Marion. Mueller, Barbara. Weller, Marie.	Kensman, D. O. McCutchann, Mary. Main, Florence. Peterson, Isaac. Rittenburg, C. W. Rogers, Cornelia V. Rounds, C. R. Ryan, Anna. Salisbury, Albert. Schroeder, H. H. Sherrick, J. R. Shutts, Geo. C. Upham, A. A. Watson, U. S. Yeakle, Juliet.	WOODRUFF. Brownell, H. F.
WEST DEPERE. Hale, Bernet S.		MISCELLANEOUS. Duggan, Mary. Lovell, Alice M. Scott, Kennedy. Thomas, S. Miles. Whitney, W. F. Unregistered, One.
WESTFIELD. Cussan, F. L. Miles, E. H. Wheeler, J. H.		HONORARY MEMBERS. John Kennedy. Julia C. Lathrop. Thomas Morgan. Wm. L. Tomlins. Hon. Alfred Bayliss. Cora M. Hamilton. Mrs. Alice P. Norton. Flora J. Cooke. Gail Calmerton. Rabbi Samuel Hirschberg. J. M. True. James A. Sheridan. Dr. Amos P. Wilder. Dr. Frederick M. Edwards. Hon. J. Q. Emery. Dr. Ralph Elmergreen. Mrs. Laura H. Rathbone. Dr. Mary D. Pogue. W. H. Middleschulte.
WEST GREEN BAY. Armstrong, Maggie V.	WILLIAMS BAY. Brown, Florence.	
WHITEWATER. Averill, Maud. Baker, Lucy A. Beckwith, Marie E. Blackmaa, Anna. Carey, Edith. Cottrell, Annie. Curry, Maude. Dahlen, Emma. Devlin, Sarah. Hallows, Clara. Hayden, Estelle. Hall, Marion. Hill, Chas. T. Hosford, Margaret.	WILMOT. Minsart, Anton.	
	WILTON. Hargrave, Mary. Hargrave, Florence.	
	WONEWOC. Hanzlik, John.	













REPORT OF THE STATE SUPERVISOR

OF

INSPECTORS OF ILLUMINATING OILS

OF THE

STATE OF WISCONSIN

From October 1, 1905, to September 30, 1905.

EDWARD E. MILLS

State Supervisor of Inspectors of Illuminating Oils



MADISON, WIS.

DEMOCRAT PRINTING CO., STATE PRINTER.

1907.



REPORT.

To the Honorable JAMES O. DAVIDSON,
Governor of the State of Wisconsin:

SIR: In compliance with statutes prescribing my duties, I have the honor to submit herewith my report as State Supervisor of Inspectors of Illuminating Oils, for the period from the first day of October, 1905, to and including the thirtieth day of September, 1906.

Dated October 1st, 1906.

EDWARD E. MILLS,
State Supervisor of Inspectors of Illuminating Oils.

Deputy Inspectors.

DEPUTY OIL INSPECTORS.

DEPUTY IESPECTORS OF ILLUMINATING OILS, WITH THEIR POSTOFFICE
ADDRESS AND THE BOUNDARIES OF THEIR DISTRICTS
ASSIGNED AS IN FORCE OCTOBER 1ST, 1906.

- Dist. No. 1.—James McGee, Milwaukee.
Milwaukee county.
- Dist. No. 2.—Anton Hanson, Racine.
Racine county, except the towns of Waterford,
Rochester, Burlington, Dover, Norway,
Yorkville, village of Union Grove and city
of Burlington.
- Dist. No. 3.—Harry E. Grace, Kenosha.
County of Kenosha, except the towns of
Wheatland, Randall and Salem.
- Dist. No. 4.—C. L. Graham, Burlington.
Towns of Waterford, Rochester, Burlington,
Dover, Norway, Yorkville, village of Union
Grove and city of Burlington in Racine
county; towns of Wheatland, Randall and
Salem in Kenosha county.
- Dist. No. 5.—Samuel Mitchell, Elkhorn.
All of Walworth county, except town of
Sharon; also Palmyra in Jefferson county.
- Dist. No. 6.—J. B. Stupfell, Sharon, Walworth county.
The town of Sharon, Walworth county.
- Dist. No. 8.—Herb. A. Beach, Prairie du Chien.
Crawford county and towns on C. B. & Q. Ry.
in Grant county, and De Soto in Vernon
county.
- Dist: No. 9.—John L. Kelley, Beloit.
The South half of Rock county.

Deputy Inspectors.

- Dist. No. 10.—C. B. Conrad, Janesville.
The North half of Rock county, including
Footville, and Janesville.
- Dist. No. 11.—Charles A. Lytle, Monroe.
Green county and towns on Illinois Central
Railway in La Fayette county.
- Dist. No. 12.—Alexander Wilson, Darlington.
La Fayette county, except towns on Illinois
Central Ry.; also Mineral Point in Iowa
county.
- Dist. No. 13.—James Harclerod, Platteville.
Grant county, except cities of Lancaster and
Boscobel, and towns on C. M. & St. Paul
Ry. from and including Boscobel to and in-
cluding Avoca in Iowa county, and also
excepting towns on C. & N. W. Ry. in
Grant county from Fennimore east and
towns on C. B. & Q. Ry.
- Dist. No. 14.—Martin Oswald, Lancaster.
Cities of Lancaster and Boscobel in Grant
county, and towns on C. M. & St. Paul Ry.,
from Boscobel to and including Avoca in
Iowa county.
- Dist. No. 15.—Wm. Peters, Dodgeville.
South half of Iowa county, except Mineral
Point; also towns on C. & N. W. Ry. in
Grant county from Fennimore east.
- Dist. No. 16.—Herman C. Winter, Madison.
Dane county, except towns of Mazomanie and
Black Earth.
- Dist. No. 17.—John B. Hicks, Mazomanie.
Towns on C. M. & St. P. Ry. in Sauk, and
Dane Iowa counties from Prairie du Sac to
Spring Green inclusive.

Deputy Inspectors.

- Dist. No. 18.—Conrad Engeberg, Lake Mills.
Jefferson county, except the town of Palmyra
and city of Watertown.
- Dist. No. 19.—J. B. Christoph, Waukesha.
Waukesha county.
- Dist. No. 20.—C. L. Brink, Hartford.
Washington and Ozaukee counties.
- Dist. No. 22.—Charles Mohr, Jr., Portage.
Columbia county, also towns on C. M. & St.
P. Ry. in Dodge county from Randolph to
Rubison inclusive, including Fox Lake and
Burnett Junction; also towns on C. & N. W.
Ry. from Watertown to Juneau inclusive;
also towns on C. M. & St. P. Ry. from Wa-
tertown to Elba, inclusive.
- Dist. No. 23.—E. J. Battles, Baraboo.
Towns on C. & N. W. Ry. from Summit to
Merrimac in Monroe, Juneau and Sauk coun-
ties.
- Dist. No. 24.—W. L. Wightman, Richland Center.
Richland county.
- Dist. No. 25.—Joseph Omundson, Viroqua.
Vernon county except the western tier of
towns; also towns on the C. M. & St. P. Ry.
from Viroqua Junction south.
- Dist. No. 26.—John C. Neidbalski, La Crosse.
La Crosse county, Trempealeau county, except
the northern tier of towns; all of the towns
on the Burlington railway in Vernon county,
except De Soto. and all towns in Buffalo and
Pepin counties on the C. B. & Q. Ry.

Deputy Inspectors.

- Dist. No. 27.—C. E. Bell, Tomah.
North half of Monroe county; Juneau county,
except the town of Necedah, Plymouth and
Wonewoc.
- Dist. No. 29.—L. C. Bronstad, Stevens Point.
Portage, Marquette, Adams and Waushara
counties.
- Dist. No. 30.—H. A. Weil, Ripon.
Towns on C. & N. W. Ry. from Ripon to
Princeton inclusive; towns on C. M. & St.
P. Ry. from Berlin to Waupun inclusive,
and the western tier of towns in Fond du
Lac county and all of Green Lake county.
- Dist. No. 31.—George H. Ferris, Fond du Lac.
Fond du Lac county, except the cities of Ripon
and Waupun and the western tier of towns
in said county; the towns of Chester, LeRoy,
Lomira, Williamstown and Theresa in
Dodge county.
- Dist. No. 32.—Chris Zelle, Sheboygan.
Sheboygan county.
- Dist. No. 33.—Oscar Lindholm, Manitowoc.
Manitowoc county, except the village of Ki-l.
- Dist. No. 35.—Ava Sprague, Oshkosh.
Winnebago county, except the cities of Nee-
nah and Menasha, and the town of Nepeu-
skum.
- Dist. No. 36.—Dr. Robert Leith, Appleton.
The city of Appleton and the three western
tiers of townships in Outagamie county, the
city of New London in Waupun county; the
cities of Neenah and Menasha in Winnebago
county, and the towns on the Wisconsin
Central railway from Neenah to Sheridan in
Waupaca county.

Deputy Inspectors.

- Dist. No. 37.—Frank B. St. Louis, Green Bay.
Brown, Kewaunee and Door counties.
- Dist. No. 38.—J. C. Mitchell, Kaukauna.
The city of Kaukauna and the eastern one one-half tiers of townships in Outagamie county; also Calumet county and the village of Kiel in Manitowoc county.
- Dist. No. 40.—C. H. Wood, Grand Rapids.
The county of Wood; towns on the Wisconsin Central Railway from Marshfield to south line of Taylor county; also Greenwood in Clark county, and the towns of Milan and Athens in Marathon county; also Waupaca county, except the towns on the Wisconsin Central Railway, and the cities New London and Clintonville; also Necedah in Juneau county.
- Dist. No. 42.—James Campbell, Neillsville.
Clark county, except the towns of Humbird and Greenwood, and the northern tier of towns.
- Dist. No. 43.—Nick Grueber, Black River Falls.
Jackson county, except the towns of Garfield, Cleveland and Merrilan.
- Dist. No. 44.—J. C. Taggart, Merrilan.
Towns of the C., St. P., M. & O. Ry. from Merrilan to Mondovi, inclusive; also the town of Fairchild in Eau Claire county.
- Dist. No. 45.—Ole J. Berg, Eau Claire.
Eau Claire county, except the town of Fairchild.
- Dist. No. 46.—J. W. Schur, Durand.
Pepin county, except the towns on Burlington Railway.

Deputy Inspectors.

- Dist. No. 47.—Ambrose Cook, Maiden Rock.
Pierce county, except the towns on the C., St.
P. M. & O. Ry.
- Dist. No. 48.—Robert Dinsmore, Hudson.
St. Croix county and towns on C., St. P., M.
& O. Ry. in Pierce county.
- Dist. No. 49.—George P. Thompson, Menominee.
Dunn county, except the towns on the Wis-
consin Central railway.
- Dist. No. 50.—Casper Lebies, Chippewa Falls.
South half of Chippewa county; towns of Thorpe,
Withee and Hixon in Clark county, and
towns on Wisconsin Central railway in
Dunn county.
- Dist. No. 51.—August F. Kroening, Wausau.
County of Marathon, except towns of Milan
and Athens.
- Dist. No. 52.—H. A. Kohl, Antigo.
County of Langlade and the towns on the
Ashland Division of the C. & N. W.
Ry. in Shawano county from Antigo to
Buckbee, inclusive.
- Dist. No. 53.—R. P. Smith, Oconto Falls.
County of Oconto; also towns on the C. & N.
W. Ry. from Oconto to Clintonville, inclu-
sive; and Leona in Forest county.
- Dist. No. 54.—E. A. Peterson, Marinette.
Marinette county.
- Dist. No. 56.—R. M. Douglas, Rhinelander.
Oneida, Vilas, Florence and Forest counties,
except Leona in Forest county.

Deputy Inspectors.

- Dis. No. 57.—C. S. Stimers, Merrill.
Lincoln county.
- Dist. No. 58.—Theo. A. Berger, Prentice.
Price and Taylor counties.
- Dist. No. 59.—H. Le Gendre, Hurley.
Iron county.
- Dist. No. 60.—John R. Anderson, Ashland.
Ashland and Bayfield counties.
- Dist. No. 61.—Fred Westman, Superior.
Douglas county.
- Dist. No. 62.—A. E. Nelson, Grantsburg.
Burnett county.
- Dist. No. 63.—J. F. Nason, St. Croix Falls.
Polk county,
- Dist. No. 64.—S. E. Washburn, Barron.
Barron, Washburn and Sawyer counties, and
towns on the Soo railroad in Gates county.

Oil Inspected.

OIL INSPECTED.

TABLE NO. 2.—Showing the number of barrels inspected in each district during the year ending September 30, 1906.

District.	Barrels.	District.	Barrels.
1	58,901	34	1,040
2	6,967	35	6,760
3	3,974	36	8,930
4	3,030	37	11,451
5	5,740	38	6,660
6	395	40	6,244
8	1,536	41	
9	5,425	42	1,333
10	6,059	43	1,374
11	3,175	44	905
12	2,321	45	4,780
13	1,878	46	533
14	2,184	47	1,629
15	2,104	48	5,615
16	11,118	49	1,652
17	1,807	50	4,100
18	2,414	51	4,482
19	5,747	52	2,112
20	4,316	53	5,562
22	8,696	54	3,758
23	5,321	55	110
24	2,717	56	4,069
25	2,110	57	2,741
26	8,204	58	2,409½
27	3,388	59	1,491
28	207	60	6,365
29	5,367	61	6,508¼
30	5,887	62	781
32	9,590	63	1,971
33	7,032	64	5,314
	2,747		
		Total	301,726

Directions for Testing and Branding.

DIRECTIONS FOR TESTING AND BRANDING ILLUMINATING OILS.

To the Deputy Inspectors:

The legal test for oils used for illuminating or heating purposes in Wisconsin is now fixed by law at 100 degrees Fahrenheit flash test, and 120 degrees Fahrenheit, burning test; this requires a double test, and the oil must meet both requirements.

In order to secure uniformity in results, all deputies are 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. Fill the glass cup with the oil about to be tested to about one-fourth inch from 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. Suspend the thermometer over the center of the cup with the bulb 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 as a guide. When the oil has reached 90 degrees apply your taper (this should consist of ordinary druggist's twine, and should be sufficiently stiffened with paraffine

Directions for Testing and Branding.

wax to burn with a small, clear flame of uniform size), watching carefully for the first flash, and repeat the same every two degrees until the burning point is reached.

Pass the lighted taper over the oil in the cup as near to the surface of the oil as is practicable without touching it; this flame should not be thrust against the surface of the oil, as it might by heating the oil cause it to flash a number of degrees below the proper point. This taper should be passed over the surface of the oil with a moderately quick but steady movement of the hand every two degrees until the burning point has been reached.

The first blue glimmer you get is the flashing point, and is usually about twenty degrees below the burning point. The burning point is reached when on applying the taper the oil in the cup burns all over its surface so that you have to blow it out. Keep a careful record of the flashing point, and the burning point, and carry this record from your receipt book to your monthly report.

Oil flashing below 100 degrees must be rejected. Oil burning below 120 degrees must be rejected. Sufficient time should be given every test to insure accuracy, usually from forty to sixty minutes to each 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 second test. If the oil burns within a degree or so of the legal test, or you have the least doubt about the exactness of your test, repeat the same to verify your result.

Oil that is used for illuminating cars on railroads and steam-boats must bear a burning test of 300 degrees. In testing 300 degrees Mineral Seal oil, the water bath should be filled with sand in place of water, and the glass cup replaced by a brass one.

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 and certificate 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.

Directions for Testing and Branding.

Always obtain a sample of the oil from the tank car before it is unloaded. Deputy inspectors are required to inspect oil standing upon track in railroad tank cars within twenty-four hours after being notified of the arrival of such railroad tank cars at their destination, and upon failure to inspect within said time shall, when such oil shall have been unloaded after the expiration of such time, inspect the same without charge.

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. All deputies are required to send in a report on the first day of the month, on blanks furnished, whether any oil has been inspected during the month or not.

All necessary paraphernalia, printed matter, etc., will be furnished from the office of the state supervisor.

You are required by law to immediately furnish this office with full information regarding any accident or explosion that may come to your knowledge in your district 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 approvable 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.

The state supervisor enjoins on each inspector a personal supervision of all 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.

The card will ordinarily be placed on the gauge end of the barrel; but when other marks interfere, then wherever practicable.

Deputy inspectors will under no circumstances, allow their cards to be used by others, but will securely fasten them upon the barrels themselves, or have the same done under their personal supervision.

The sale or disposal in any manner of any empty casks or barrels without first thoroughly cancelling, defacing or remov-

Directions for Testing and Branding.

ing the Wisconsin inspector's card will, on conviction, subject the owner to a fine not to exceed \$500.00, or to imprisonment in the county jail not exceeding six months, or to both such fine and imprisonment.

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.

SPECIAL INSTRUCTION.

1. Record of inspection must be made upon receipts, certificates and cards, at the actual flashing and burning point.

2. Upon inspection, a card which will be supplied by this office, must be securely fastened upon all barrells, etc., containing oil, with the proper information written thereon, over the signature of the inspector. If the oil is approved, you will write "Approved," if rejected, "Rejected for illuminating purposes," in the place designated upon the card.

3. At the end of the receipt now in used should be written the words, "as amended."

4. Each inspector must be particular in designating his district by inserting his proper district number upon all receipts, certificates, and the stubs of the same; also upon all reports cards etc., issued by him. Do not fail to follow this practice.

5. In addition to the information formerly required to be entered upon your monthly report, you should make report of the consecutive numbers of cards issued during the month for which report is made. If no cards have been used your report should so state. Be certain to use cards in consecutive order.

6. The several columns of figures upon your report must, in every case, be properly footed, and all blanks filled.

7. In order that the work of the office of the State Treasurer, as well as that of this office, may be facilitated and the inspectors' salaries promptly paid, the necessity of filing monthly re-

Directions for Testing and Branding.

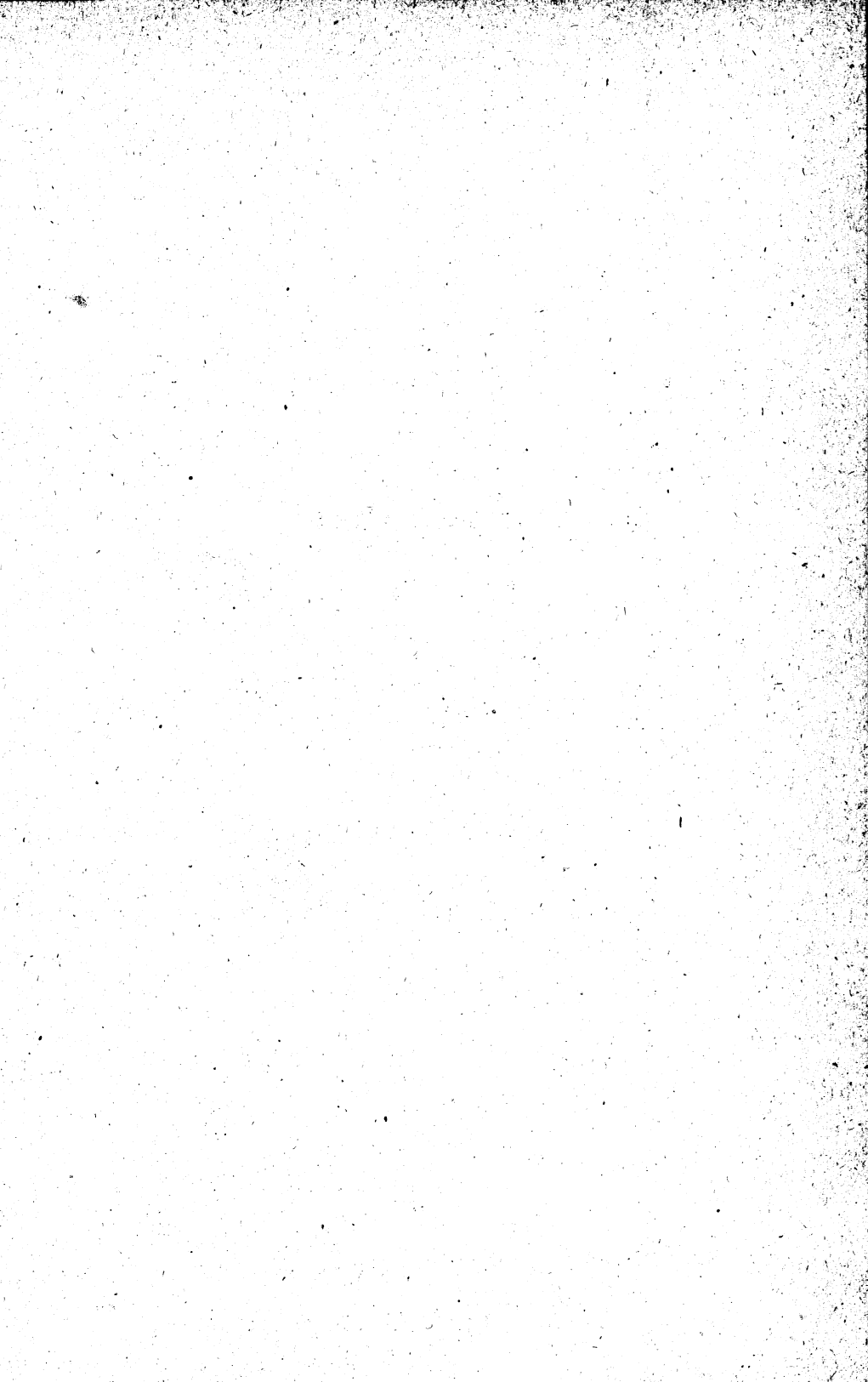
ports promptly on the first of the succeeding month is called to your attention. Hereafter salaries will be withheld until the following month, in cases when reports are not filed in the proper office prior to the tenth day of the month.

8. Your attention is called to the provisions of law concerning gasoline. You are charged with the enforcement of the law in that particular, throughout your district. Any wilful violation should be reported to this office at once.

A duplicate of the montly reprot must be filed with the State Treasurer, and a remittance of your entire collection for the month made to that office.

The careful observance of the above regulations is urgently requested. The law concering inspections should be thoroughly understood by those having its enforcement in charge, and a careful study of its provisions by the deputy should be made.

For all points not mentioned in 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.





REPORT OF THE STATE SUPERVISOR

OF

Inspectors of Illuminating Oils

OF THE

STATE OF WISCONSIN

From October 1, 1906, to September 30, 1907.

EDWARD L. TRACY,

State Supervisor of Inspectors of Illuminating Oils.



MADISON, WIS.

DEMOCRAT PRINTING CO., STATE PRINTER.

1907.



LETTER OF TRANSMITTAL.

To the Honorable JAMES O. DAVIDSON,

Governor of Wisconsin.

DEAR SIR: In compliance with Section 1421c of Chapter 466, I have the honor to submit herewith my report as State Supervisor of Inspectors of Illuminating Oils, for the year ending September 30, 1907.

I assumed the duties of this office May 29, 1907. The report covering the period from Oct. 1, 1906 to May 30, 1907, is taken from the monthly reports of the deputies in the several districts.

All of which is respectfully submitted.

EDWARD L. TRACY,

Dated October 1, 1907.

State Supervisor of Inspectors of Illuminating Oils.

DEPUTY OIL INSPECTORS.

*Deputy Inspectors of Illuminating Oils with their Post-office Address
and the Boundaries of their Districts Assigned as in force
October 1, 1907.*

Dist. No. 1. James McGee, Milwaukee.
Milwaukee County.

Dist. No. 2. Anton Hanson, Racine.
Racine County, except the towns of Waterford, Rochester,
Burlington, Dover, Norway, Yorkville, village of Union
Grove and city of Burlington.

Dist. No. 3. Harry E. Grace, Kenosha.
County of Kenosha, except the towns of Wheatland,
Randall and Salem.

Dist. No. 4. C. L. Graham, Burlington.
Towns of Waterford, Rochester, Burlington, Dover,
Norway, Yorkville, village of Union Grove and city of
Burlington in Racine County; towns of Wheatland,
Randall and Salem in Kenosha County.

Dist. No. 5. Samuel Mitchell, Elkhorn.
All of Walworth County, except town of Sharon; also
Palmyra in Jefferson County.

Dist. No. 6. J. B. Stupfell, Sharon.
The town of Sharon, Walworth County.

Dist. No. 8. Herb. A. Beach, Prairie du Chien.
Crawford County and towns on the C. B. & Q. Ry. in
Grant County, and Desoto in Vernon County.

Deputy Oil Inspectors.

- Dist. No. 9. John L. Kelly, Beloit.
South half of Rock County.
- Dist. No. 10. C. B. Conrad, Janesville.
The North half of Rock County, including Footville
and Janesville.
- Dist. No. 11. Chas. A. Lytle, Monroe.
Green County and towns on Illinois Central Ry.; also
Mineral Pt. in Iowa County.
- Dist. No. 12. Alexander Wilson, Darlington.
Lafayette County, except the towns on I. C. Ry.; also
Mineral Pt. in Iowa County.
- Dist. No. 13. James Harclerod, Platteville.
Grant County, excepting towns on C. & N. W. Ry. in
Grant County from Fennimore east and towns on C.
B. & Q. Ry.
- Dist. No. 15. Wm. Peters, Dodgeville.
South half of Iowa County, except Mineral Pt.; also
towns on C. & N. W. Ry. in Grant County from Fenni-
more east.
- Dist. No. 16. Herman C. Winter, Madison.
Dane County, except towns of Mazomanie and Black
Earth.
- Dist. No. 17. John B. Hicks, Mazomanie.
Towns on C. M. & St P. Ry. in Sauk, Dane and Iowa
Counties from Prairie du Sac to Spring Green in-
clusive.
- Dist. No. 18. Conrad Engeberg, Lake Mills.
Jefferson County, except the town of Palmyra and
city of Watertown.
- Dist. No. 19. J. B. Christoph, Waukesha.
Waukesha County.

Deputy Oil Inspectors.

Dist. No. 20. C. L. Brink, Hartford.

Washington and Ozaukee Counties.

Dist. No. 22. Chas. Mohr, Jr., Portage.

Columbia County, also towns on C. M. & St. P. Ry. in Dodge County from Randolph to Rubicon inclusive, including Fox Lake and Burnett Junction; also towns on C. M. & St. P. Ry. from Watertown to Juneau inclusive; also towns on C. M. & St. P. Ry. from Watertown to Elba inclusive.

Dist. No. 23. E. J. Battles, Baraboo.

Towns on C. & N. W. Ry. from Summit to Merrimac in Monroe, Juneau and Sauk Counties.

Dist. No. 24. W. L. Wightman, Richland Center.

Richland County.

Dist. No. 25. Joseph Osmundson, Viroqua.

Vernon County except the Western tier of towns; also towns on the C. M. & St. P. Ry. from Viroqua Junction south.

Dist. No. 26. John C. Neidbalski, La Crosse.

La Crosse County, Trempealeau County, except the northern tier of towns; all of the towns on the Burlington Ry. in Vernon County, except Desoto, and all towns in Buffalo and Pepin Counties on the C. B. & Q. Ry.

Dist. No. 27. C. E. Bell, Tomah.

North half of Monroe County; Juneau County, except the town of Necedah, Plymouth and Wonewoc.

Dist. No. 29. L. C. Bronstad, Stevens Point.

Portage, Marquette, Adams and Waushara Counties.

Dist. No. 30. Frank Wilson, Ripon.

Towns on C. & N. W. Ry. from Ripon to Princeton inclusive towns on C. M. & St. P. Ry. from Berlin to Waupun inclusive, and the western tier of towns in Fond du Lac County and all of Green Lake County.

Deputy Oil Inspectors.

Dist. No. 31. Geo. H. Ferris, Fond du Lac.

Fond du Lac County, except the cities of Ripon, and Waupun and the western tier of towns in said county; the towns of Chester, LeRoy, Lomira, Williamstown and Theresa in Dodge County.

Dist. No. 32. Chris. Zelle, Sheboygan.

Sheboygan County.

Dist. No. 33. Oscar Lindholm, Manitowoc.

Manitowoc County, except the village of Kiel.

Dist. No. 35. Ava Sprague, Oshkosh.

Winnebago County, except the cities of Neenah and Menasha, and the town of Nepeuskum.

Dist. No. 36. Dr. Robt. Leith, Appleton.

The city of Appleton and the three western tiers of townships in Outagamie County, the city of New London in Waupaca County the cities of Neenah and Menasha in Winnebago County, and the towns on the W. C. Ry. from Neenah to Sheridan in Waupaca County.

Dist. No. 37. Frank B. St. Louis, Green Bay.

Brown, Kewaunee and Door Counties.

Dist. No. 38. J. C. Mitchell, Kaukauna.

The city of Kaukauna and the eastern one half tiers of townships in Outagamie County; also Calumet County and the village of Kiel in Manitowoc County.

Dist. No. 40. C. H. Wood, Grand Rapids.

The County of Wood; towns on the W. C. Ry. from Marshfield to south line of Taylor County; also Greenwood in Clark County and the towns of Milan and Athens in Marathon County; also Waupaca County, except the towns on the W. C. Ry.; and the cities New London and Clintonville; also Necedah in Juneau County.

Deputy Oil Inspectors.

- Dist. No. 42. James Campbell, Neillsville.
Clark County, except the towns of Humbird and Greenwood, and the northern tier of towns.
- Dist. No. 43. J. A. Gruber, Acting Deputy, Black River Falls.
Jackson County, except the towns of Garfield, Cleveland and Merrillan.
- Dist. No. 44. F. W. Archer, Merrillan.
Towns on the C., St. P., M. & O. Ry. from Merrillan to Mondovi, inclusive; also the town of Fairchild in Eau Claire County.
- Dist. No. 45. Ole. J. Berg, Eau Claire.
Eau Claire County, except the town of Fairchild.
- Dist. No. 46. J. W. Schur, Durand.
Pepin County, except the towns on the Burlington Ry.
- Dist. No. 47. Ambrose Cook, Maiden Rock.
Pierce County, except the towns on the C., St. P., M. & O. Ry.
- Dist. No. 48. Robt. Dinsmore, Hudson.
St. Croix County and towns on C., St. P., M. & O. Ry. in Pierce County.
- Dist. No. 49. Geo. P. Thompson, Menominee.
Dunn County, except the towns on the W. C. Ry.
- Dist. No. 50. Caspar Lebies, Chippewa Falls.
South half of Chippewa County; towns of Thorpe, Withee and Hixon in Clark County, and the towns on the W. C. Ry. in Dunn County.
- Dist. No. 51. August F. Kroening, Wausau.
County of Marathon, except the towns of Milan and Athens.
- Dist. No. 52. H. A. Kohl, Antigo.
County of Langlade and the towns on the Ashland Division of the C. & N. W. Ry. in Shawano County from Antigo to Buckbee, inclusive.

Deputy Oil Inspectors.

- Dist. No. 53. R. P. Smith, Oconto Falls.
Town of Oconto; also towns on the C. & N. W. Ry. from
Oconto to Clintonville, inclusive.
- Dist. No. 54. E. A. Peterson, Marinette.
Marinette County.
- Dist. No. 56. R. M. Douglas, Rhinelander.
Oneida, Vilas, Florence and Forest Counties, except
Leona in Forest County.
- Dist. No. 57. C. S. Stimers, Merrill.
Lincoln County.
- Dist. No. 58. Theo A. Berger, Medford.
Price and Taylor Counties.
- Dist. No. 59. H. LeGendre, Hurley.
Iron County.
- Dist. No. 60. John R. Anderson, Ashland.
Ashland and Bayfield Counties.
- Dist. No. 61. Fred Westman, Superior.
Douglas County.
- Dist. No. 62. A. E. Nelson, Grantsburg.
Burnett County.
- Dist. No. 63. J. F. Nason, St. Croix Falls.
Polk County.
- Dist. No. 64. S. E. Washburn, Barron.
Barron, Washburn and Sawyer Counties, and the towns
on the Soo Railroad in Gates County.

*Oil Inspected.***OIL INSPECTED.**

Showing the number of barrels inspected in each district during the year ending September 30, 1907.

District.	Barrels.	District.	Barre's.
1.....	62,151	35.....	6,768
2.....	6,944	36.....	8,883
3.....	3,886	37.....	11,369
4.....	3,390	38.....	7,150
5.....	5,717	40.....	6,679
6.....	490	42.....	1,556.5
8.....	1,850	43.....	2,091
9.....	6,196	44.....	723
10.....	5,739	45.....	5,322
11.....	3,240	46.....	753
12.....	2,535	47.....	1,777
14.....	4,817	48.....	5,832
15.....	2,438	49.....	1,651
16.....	12,151	50.....	4,639
17.....	1,692	51.....	4,058
18.....	3,086	52.....	2,849
19.....	5,782	53.....	5,634
20.....	5,121	54.....	3,628
22.....	9,471	56.....	3,319
23.....	5,301	57.....	3,215
24.....	2,727	58.....	3,844.5
25.....	2,149	59.....	1,465
26.....	10,016	60.....	6,293
27.....	4,257	61.....	7,578.5
29.....	6,360	62.....	574
30.....	6,598	63.....	3,033
31.....	8,607	64.....	5,498
32.....	7315.		
33.....	3,419	Total.....	319,460.5

Testing and Branding Illuminating Oils.

DIRECTIONS FOR TESTING AND BRANDING ILLUMINATING OILS.

To the Deputy Inspectors:

The legal test for oils used for illuminating or heating purposes in Wisconsin is now fixed by law at 100 degrees Fahrenheit flash test, and 120 degrees Fahrenheit, burning test; this requires a double test, and the oil must meet both requirements.

In order to secure uniformity in results, all deputies are 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. Fill the glass cup with the oil about to be tested to about one-fourth inch from 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. Suspend the thermometer over the center of the cup with the bulb 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 as a guide. When the oil has reached 90 de-

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degrees apply your taper (this should consist of ordinary druggist's twine, and should be sufficiently stiffened with paraffine wax to burn with a small, clear flame of uniform size), watching carefully for the first flash, and repeat the same every two degrees until the burning point is reached.

Pass the lighted taper over the oil in the cup as near to the surface of the oil as is practicable without touching it; this flame should not be thrust against the surface of the oil, as it might by heating the oil cause it to flash a number of degrees below the proper point. This taper should be passed over the surface of the oil with a moderately quick but steady movement of the hand every two degrees until the burning point has been reached.

The first blue glimmer you get is the flashing point, and is usually about twenty degrees below the burning point. The burning point is reached when on applying the taper the oil in the cup burns all over its surface so that you have to blow it out. Keep a careful record of the flashing point, and the burning point, and carry this record from your receipt book to your monthly report.

Oil flashing below 100 degrees must be rejected. Oil burning below 120 degrees must be rejected. Sufficient time should be given every test to insure accuracy, usually from forty to sixty minutes to each 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 second test. If the oil burns within a degree or so of the legal test, or you have the least doubt about the exactness of your test, repeat the same to verify your result.

Oil that is used for illuminating cars on railroads and steamboats must bear a burning test of 300 degrees. In testing 300 degrees Mineral Seal oil, the water bath should be filled with sand in place of water, and the glass cup replaced by a brass one.

In all tank car inspections a record must be kept of the name of the tank care 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 and certificate book in addition to the other

Testing and Branding Illuminating Oils.

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 if possible. Deputy inspectors are required to inspect oil standing upon track in railroad tank cars within twenty-four hours after being notified of the arrival of such railroad tank cars at their destination, and upon failure to inspect within said time shall, when such oil shall have been unloaded after the expiration of such time, inspect the same. The sample to be taken from the storage tank (wherein the car was emptied) and tested, and the usual charge made for the number of barrels contained in the tank car. If you have a place in your district where it would be impossible to get to within 24 hours don't insist on holding the car if you are reasonably sure that you get the amount contained in the tank car and a sample of the oil.

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. All deputies are required to send in a report on the first day of the month, on blanks furnished, whether any oil has been inspected during the month or not.

All necessary paraphernalia, printed matter, etc., will be furnished from the office of the state supervisor.

You are required by law to immediately furnish this office with full information regarding any accident or explosion that may come to your knowledge in your district 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 approvable 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.

The state supervisor enjoins on each inspector a personal supervision of all 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.

The card will ordinarily be placed on the gauge end of the

Testing and Branding Illuminating Oils.

barrel; but when other marks interfere, then wherever practicable.

Deputy inspectors will under no circumstances, allow their cards to be used by others, but will securely fasten them upon the barrels themselves, or have the same done under their personal supervision.

The sale or disposal in any manner of any empty casks or barrels without first thoroughly cancelling, defacing or removing the Wisconsin inspector's card will, on conviction, subject the owner to a fine not to exceed \$500.00, or to imprisonment in the county jail not exceeding six months, or to both such fine and imprisonment.

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.

SPECIAL INSTRUCTION.

1. Record of inspection must be made upon receipts, certificates and cards, at the actual flashing and burning point.
2. Upon inspection, a card which will be supplied by this office, must be securely fastened upon all barrels, etc., containing oil, with the proper information written thereon, over the signature of the inspector. If the oil is approved, you will write "Approved," if rejected, "Rejected for illuminating purposes," in the place designated upon the card.
3. At the end of the receipt now in use should be written the words, "as amended."
4. Each inspector must be particular in designating his district by inserting his proper district number upon all receipts, certificates, and the stubs of the same; also upon all reports, cards, etc., issued by him. Do not fail to follow this practice.
5. In addition to the information formerly required to be entered upon your monthly report, you should make report of the consecutive numbers of cards issued during the month for which report is made. If no cards have been used your report should so state. Be certain to use cards in consecutive order.
6. The several columns of figures upon your report must, in every case, be properly footed, and all blanks filled.

Testing and Branding Illuminating Oils.

7. In order that the work of the office of the State Treasurer, as well as that of this office, may be facilitated and the inspectors' salaries promptly paid, the necessity of filing monthly reports promptly on the first of the succeeding month is called to your attention. Hereafter salaries will be withheld until the following month, in cases when reports are not filled in the proper office prior to the tenth day of the month.

8. Your attention is called to the provisions of law concerning gasoline. You are charged with the enforcement of the law in that particular, throughout your district. Any wilful violation should be reported to this office at once.

In regard to the gasoline receptacles: I have found from time to time, places where iron barrels are being sold and refilled with gasoline, which are not painted red as the law requires. Now the only time that gasoline can possibly be handled in a receptacle, not painted red, is when it is being transported either in a tank car or in barrels. The moment it arrives where it is to be stored or distributed to the public it must be so stored and distributed as the law requires. The purpose of this law is to make known to persons at sight that the receptacles contain gasoline, which is a dangerous explosive.

A duplicate of the monthly report must be filed with the State Treasurer, and a remittance of your entire collection for the month made to that office.

The careful observance of the above regulations is urgently requested. The law concerning inspections should be thoroughly understood by those having its enforcement in charge, and a careful study of its provisions also of the special instructions given herein, should be made by the deputy and others interested in the sale of illuminating oils and gasoline.

For all points not mentioned in 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.

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STATUTES GOVERNING INSPECTION.

CHAPTER 57a.**OF THE INSPECTION OF ILLUMINATING OILS.**

Supervisor of inspectors, appointment of. SECTION 1421a. The governor shall, by and with the advice and consent of the senate, appoint a suitable person, who shall not be 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 inspectors of illuminating oils, whose term of office shall be two years from the first day of April in the year of his appointment or until his successor shall be qualified. The governor may remove such a person from office and fill any vacancy arising from such removal or other cause for the unexpired portion of the term.

Oath and bond. SECTION 1421b. The person appointed such supervisor shall, before he enters upon his duties, take the constitutional oath of office and execute a bond to the state 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, which bond, so approved, shall be filed in the office of the secretary of the state.

Duties of supervisors; deputies; stamps and brands; use of. SECTION 1. Section 1421c of the statutes of 1898 is hereby amended so as to read as follows: Section 1421c. It shall be the duty of said supervisor to devote his entire time to the duties of said office and under the direction of the governor to oversee all deputy inspectors of illuminating oils, instruct them in the performance of their duties, see that they faithfully perform the

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duties of their office, keep a record of their reports to him, and make a report to the governor on the first day of October in each year. He shall make rules and regulations for their guidance not inconsistent with the provisions of this chapter. The said supervisor may with the advice and consent of the governor appoint a sufficient number of deputy inspectors to properly inspect all oils sold in the state for illuminating or heating purposes. The inspection districts shall be defined by the supervisor, with the approval of the governor, and all oils shall be inspected in the inspection district where sold for consumption; provided that said supervisor may, in case said oil is sold for consumption at a point removed from the railroad, permit said oil to be inspected outside of said district if in his judgment it is impracticable to have such oil inspected in said district. The state treasurer shall prepare suitable stamps, seals, marks or brands or any combination of the same or any thereof, to be securely fastened upon all packages or enclosures inspected containing oil. Said stamps, seals, marks or brands or a combination of the same or any thereof, shall be of the design designated by said treasurer and so arranged as to be used only once, and to be numbered consecutively, and to indicate the number of district to which issued. All districts shall be numbered by the state treasurer. The state treasurer shall make such rules and regulations for issuing, affixing and cancelling said stamps, seals, marks and brands as may be necessary to prevent their being used more than once and to compel the deputy inspectors to inspect all oils used in this state for illuminating or heating purposes, and to make prompt monthly remittances of all fees collected and complete reports of all doings as said deputy.

Bond, duties and salaries of deputies; salary of supervisor; disposition of fees. SECTION 2. Section 1421d, of the statutes of 1898 is hereby amended to read as follows: Section 1421d. Every deputy inspector shall before entering upon his duties take an oath faithfully to discharge the same and execute a bond to the state in a sum not exceeding five thousand dollars nor less than five hundred dollars as may be fixed in each case by the said supervisor with the approval of the governor

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conditioned as aforesaid; such bond to be filed in the office of the state treasurer and a certified copy thereof in the office of the clerk of the county wherein the deputy inspector executing the same shall reside. All bonds executed under the provision of this chapter shall be for the benefit of the state and of any person aggrieved by any act or neglect of the supervisor or his deputies respectively executing the same. The sureties on the bond of each deputy shall be approved by the county judge of the county in which the deputy executing the same shall reside and the bond of the supervisor and of each deputy shall be approved by the governor. Every deputy inspector shall examine and test all oils offered for sale or used for illuminating or heating purposes by any person in the district assigned to him and not having been previously tested and stamped, sealed or branded by a deputy inspector of the state. He shall on the first day of each month make in writing to the state supervisor and to the state treasurer a full statement of the number of barrels of oil inspected, for whom inspected, the date and place of such inspection, the numbers of the stamp or stamps, seal or seals, mark or marks, brand or brands, or any combination thereof used, and an account of the actual receipts of his office, and at the same time remit to the state treasurer all fees received for oil inspected by him during the preceeding month, which fee shall be set aside by the state treasurer and constitute a separate fund for the payment of the salary and expenses of the supervisor and his deputies. Said supervisor shall receive an annual salary of fifteen hundred dollars and each deputy inspector a salary of not to exceed one hundred dollars per month, said salaries to be fixed by the governor, but in no case shall the salary of a deputy inspector and his actual and necessary travelling expenses in the discharge of his official duties exceed together with his said salary the sum total of eight cents per barrel for the number of barrels of oil inspected during the month within his inspection district. The supervisor and his deputies shall have their actual and necessary expenses paid out of said special fund upon being approved by the governor and audited by the secretary of state, subject to the provisions of this act. Every deputy shall comply with all the instructions issued by the supervisor and the

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state treasurer and furnish to the supervisor full information regarding any accident or explosion that may come to his knowledge from the use of illuminating or heating oils. The deputy inspector shall be liable to all the penalties provided for in this chapter for any neglect, wilful misconduct or misfeasance in the discharge of their duties. The governor may at any time remove said supervisor or any deputy upon reasonable notice.

What oils to be inspected; sale of uninspected; adulterations; false branding; cancellation of seals, etc. SECTION 3. Section 1421e of the statutes of 1898 is hereby amended to read as follows: Section 1421e. All mineral or petroleum oil or any oil or fluid substance which is the 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 chapter before being offered for sale or sold for consumption or used for illuminating or heating purposes within this state; provided, that the gas or vapor from said oils may be used for illuminating purposes without inspection when the oils from which gas or vapor is generated are contained in closed reservoirs outside the building lighted by said gas, and that nothing in this chapter shall be construed to prevent the use in street or other open air lamps or in stores, for heating purposes; of the lighter products of petroleum such as gasoline, benzole or naphtha. Any person who shall, personally or by 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 illuminating or heating oil which shall not have been examined or tested under the provisions of this chapter, or which, having been so tested, shall have been marked as rejected, or who shall knowingly use or furnish for use for illuminating purposes any oil which shall not have been properly examined or tested, and stamped, sealed or marked as herein provided, shall be liable to a fine of not less than five dollars nor more than five hundred dollars, and any person so offending against the provisions of this chapter 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 use. Any person who shall

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wilfully adulterate any illuminating or heating oil by adding thereto benzine, naphtha or parafine oil or any substance or thing whatever 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 not more than six months. Any person who shall falsely stamp, seal, brand or mark any cask, barrel or other package of oil, or who shall personally or by agent or servant, cause the changing, altering or defacing in any manner any stamp, seal, brand or device affixed to any cask or barrel or other package of oil by any deputy inspector, or who shall refill or use any cask, barrel or other package having a deputy inspector's seal, mark, stamp or brand thereon without cancelling or defacing said seal, mark, stamp or brand and having the oil in such a cask, barrel or other package properly examined or tested and stamped or marked under the provisions of this chapter, or who shall offer for sale, or sell any such oil, representing it to be in any respect other and different in quality or kind than as represented to the person so purchasing the same, or without providing and exhibiting in a conspicuous place where such oil is sold, a sign or placard, announcing and plainly proclaiming to all intending purchasers the tests, both as to explosive and illuminating qualities, provided for in this act, shall be liable to a fine of not less than five dollars nor more than five hundred dollars, or to imprisonment in the county jail for not more than six months, or to both such fine and imprisonment; and any person who shall sell or in any way dispose of an empty cask, barrel or other package bearing a deputy inspector's seal, brand or stamp without first thoroughly cancelling, defacing or removing such seal, stamp or brand, mark or any combination thereof, shall be liable to a fine of not less than five dollars, nor more than five hundred dollars or to imprisonment in the county jail not exceeding six months or to both such fine and imprisonment.

Standard of illuminating oil; use of other. SECTION 1421f. 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

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at a temperature less than one hundred degrees above the zero point of Fahrenheit's thermometer, open test, where tested as provided in section 1421i, or will burn freely at a temperature less than one hundred and twenty degrees above the zero point of such thermometer, open test, where tested as therein provided. 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, nor shall the same be carried as freight in any passenger, baggage, mail or express car on any railroad. Any person violating any of the provisions of this section shall be fined not less than one hundred dollars nor more than one thousand dollars and 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.

Supplies and apparatus; certificate of inspection; grades. SECTION 4. Section 1421g of the statutes of 1898 is hereby amended to read as follows: Section 1421g. It shall be the duty of the superintendent of public property to provide said supervisor and every deputy inspector all the necessary instruments and apparatus for examining and testing illuminating oils, together with the necessary stamps, seals, marks and brands, blank reports and record books required by the provisions of this act, which said instruments, apparatus, stamps, seals, marks, brands, blank reports, and record books shall, in case of the special fund provided for in section 1421d, be insufficient therefor, be paid for out of the general fund, said general fund to be reimbursed from said special fund as soon as said special fund shall contain sufficient funds therefor, and each deputy inspector shall use such instruments and apparatus in performing his duties and shall promptly examine and test, when called upon, any oil offered as to the temperature at which it will emit a combustible vapor and burn freely and also as to the illuminating qualities

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of said oil and if upon examination or test any such oil shall be found to meet the requirements of this chapter he shall affix to the package, cask or barrel containing the same a brand, stamp, seal or mark or any required combination of the same, containing the word "approved" with the name and district and the day of testing over his official signature upon such package, cask or barrel and issue to the person for whom inspected a certificate of inspection and approval, reciting the number of barrels, or in case of tank cars, the name of the tank car line, with number of said car, with the number of barrels contained, the commercial name of the oil, with the test found both as to the explosive quality and as to illuminating power and the date of inspection, and any person may sell the same as an illuminating or heating oil. But if the oil so tested shall not meet the requirements specified in this chapter, he shall mark in plain letters, by stencil brand, stamp or seal as required, the words "rejected for illuminating purposes" with the date of testing, name of the district and his official signature, and issue a certificate to that effect; and it shall be unlawful for any person to sell such oil for illuminating or heating purposes. Said brand and stamp for the approval of oils shall further contain such numerals indicating the degree such oils test, together with the illuminating qualities of said oils, said illuminating qualities to be designated "excellent," "good," "fair," or "poor," as the same may be found upon being tested under the tests prescribed by the commission provided for by section seven of this act, and if any person shall sell or offer for sale any such rejected oils he shall 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.

Powers to enter premises. SECTION 5. Section 1421h of the statutes of 1898 is hereby amended to read as follows: Section 1421h. It shall be lawful for the supervisor or any deputy inspector to enter into or upon the premises of any manufacturer, refiner, or vendor of said illuminating oils, and if he shall find or discover upon said premises any oil which shall

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not have been examined or tested and properly marked, stamped, sealed or branded he shall at once proceed to test and thereafter properly mark, stamp, seal or brand the same.

How tests made. SECTION 1421i. In all tests of illuminating oils made under this chapter the tester known as the Tagliabue open cup or commercial tester shall be 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 100 degrees, nor more than 2 degrees Fahrenheit per minute above 100 degrees. The taper used in making test shall be such as shall give a clear flame as nearly uniform in size as is practicable. The state supervisor shall give such instructions to the deputies as in his judgment shall be necessary to secure uniformity in the methods of making the tests.

Fees; testing of tank cars; "barrels," what is. SECTION 6. Section 1421j of the statutes of 1898 is hereby amended to read as follows: Every deputy inspector shall demand and receive from the owner or other person for whom or at whose request he shall examine or test any oil or sample, ten cents for every single cask, barrel, package or sample he shall test, and the said fee shall constitute a lien on the oil so inspected. Each deputy may inspect and test illuminating or heating oil 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; if any such oils are not inspected within twenty-four hours after arriving at their destination they may be unloaded, and the deputy inspector shall make his inspection after they are so unloaded, and when such oil has been inspected no other inspection shall be necessary, but the deputy shall when such oil is put in stationary tanks, barrels, mark, stamp, seal or brand them 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 chapter, and the fees for inspecting the same and marking, stamping, sealing or branding the barrels shall for each fifty gallons be the same

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as prescribed for each barrel, cask or package. The term cask, barrel, package or sample of oil as used herein means a quantity not exceeding that contained in an ordinary commercial barrel, estimated at fifty gallons.

Deputy's record; dealing in oil. SECTION 1421k. Every deputy inspector shall keep a true record of all casks, barrels, tanks or other packages of oil tested by him, which record shall state the time and place of inspection, the number of casks, barrels or other packages then and there examined, the name of the person for whom or at whose request such examination 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; such account shall be open to examination by any person. No inspector shall, during his term of office, traffic, directly or indirectly, in any oil used for illuminating or heating purposes or be interested in any manner whatever in the manufacture, refining or sale of such oil, and any inspector violating any of the provisions of this section shall be removed from office immediately upon proof of such violation and be liable to a fine of not less than one hundred dollars nor more than five hundred dollars; provided that these provisions in regard to dealing in oil shall not apply to deputies whose inspection during the term of one year, shall not exceed fifteen hundred barrels.

Violation of law; manslaughter. SECTION 1421l. It shall be the duty of every inspector who shall know of the violation of any provision of this chapter to notify the district attorney of the county in which the same shall occur and to make complaint before any court of competent jurisdiction, and it shall be the duty of all district attorneys to prosecute within their respective counties all cases of offense arising under this chapter. And any inspector who shall have knowledge of any such violation and fail to enter a complaint against the person so offending shall be liable to a fine not exceeding fifty dollars and shall be removed from his office; and in case the death of any person shall result from the explosion of a lamp or other vessel containing illuminating oil sold, used or furnished for use in violation of any of the provisions of this chapter the person

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selling or furnishing said oil for use shall be deemed guilty of manslaughter in the third degree. 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.

Scope of chapter. SECTION 1421m. Nothing contained in this chapter shall be construed to prevent manufacturers, refiners or dealers in this state from keeping in their warehouses or tanks for transshipment to other states illuminating oils of a grade below the test prescribed; nor shall this chapter be construed to apply to crude petroleum. It is the true intent and meaning of this chapter that the terms oils, illuminating oils, oil used for illuminating and heating purposes and all similar words, terms and expressions 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 other substance so obtained mineral or petroleum shall be a constituent part by whatsoever name or title such oil, fluid or other substance may be known or called.

Commission to determine upon test. SECTION 7. The governor may appoint three competent disinterested persons, a commission to serve without compensation, to decide upon some practical test or tests by which to determine the illuminating qualities of oils as provided in section 1421g of the statutes of 1898 as amended by section 4 of this act and prescribe rules and regulations for applying said test and determining the results thereof, and all deputy inspectors of oil shall in testing oils for illuminating purposes use the test prescribed by such commission in accordance with the rules and regulations by said commission prescribed.

Reversion to general fund. SECTION 8. All moneys remaining in the state treasury in the special fund provided for in section 1421d shall at the end of each fiscal year be covered in the general fund.

Sale of gasoline. SECTION 9. Every person dealing at retail in gasoline in this state shall after the first day of June, 1901, deliver the same to the purchaser only in barrels, casks,

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packages or cans painted vermilion red having the word "gasoline" plainly stenciled thereon. No such dealer shall deliver kerosene in a barrel, cask, package or can painted or stenciled as above. Every person purchasing gasoline for use shall procure and keep the same only in barrels, casks, packages, or cans painted and stenciled as above. No person keeping for use or using kerosene shall put or keep the same in any barrel, cask, package or can painted or stenciled as above. Any person violating any of the provisions of this section shall be punished by a fine of not less than five nor more than fifty dollars or by imprisonment in the county jail not to exceed three months, or by both such fine and imprisonment.

Conflicting laws repealed. SECTION 10. All acts or parts of acts in conflict with this act are hereby repealed.

SECTION 11. This act shall take effect and be in force from and after the first day in June, 1901.

Approved May the 15th, 1901.

CHAPTER 21.

AN ACT to amend section 290 of the statutes of 1898, relating to the Superintendent of Public Property and of Stationery.

The people of the state of Wisconsin, represented in senate and assembly, do enact as follows:

Stationery, who entitled to. SECTION 1. Section 290 of the statutes of 1898 is hereby amended by inserting after the words, "State Veterinarian for his use," in the twenty-fifth line thereof, the following words: "To the State Supervisor of Inspectors of Illuminating Oils for his use," so that said section when so amended shall read as follows: "Section 290. The state stationery shall be deposited with the superintendent for safekeeping and distribution. He shall charge himself in the books of his office with all stationery purchased and received by

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him at cost price, and shall keep separate accounts with each office, body and institution to whom he shall furnish stationery. In addition to the stationery required by law to be furnished to the legislature and the lieutenant governor, the superintendent shall furnish all necessary stationery as follows, and to no others: To the governor or his private secretary for his office; to the secretary of state or his assistant for his office; to the chief clerk of the land office for his office; to the state treasurer or his assistant for his office; to the treasury agent for his office; to the attorney general or his assistant for his office; to the state superintendent or his assistant for his office; to the clerk of the supreme court for said court; to the secretary or librarian of the state historical society for its rooms; to the adjutant general or his assistant for his office; to the quartermaster general or his assistant and his office; to the secretary of the state board of agriculture for said board; to the railroad commissioner or his deputy for his office; to the insurance commissioner or his deputy for his office; to the secretary of the board of control for the use of said board; to the state librarian for the state library; to the commissioner of labor statistics for his office; to the superintendent of public property for his office; to the dairy and food commissioner for his office; to the commissioners of fisheries for their office; to the state fish and game warden for his office; to the forest warden for his use; to the secretary of the free library commission for their use; to the bank examiner or his deputy for his office; to the state veterinarian for his use; to the state supervisor of inspectors of illuminating oils for his use. No clerk or any state officer or any department of the state shall be permitted to receive any stationery unless on the written order of some of the persons above described.

SECTION 2. This act shall take effect and be in force from and after its passage and publication.

Approved March 19th, 1903.